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 511 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

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

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

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

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

Wonjang Baek, Gyeonggi-do, KOREA, REPUBLIC OF;
John Kim, Seoul, KOREA, REPUBLIC OF;
Seong Baek Lee, Seoul, KOREA, REPUBLIC OF;

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Complete and send this form, together with applicable fee(s), to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
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CURRENT CORRESPONDENCE ADDRESS (Note: the Block 1 for any change of address)

49455 7590 12/12/2012
STEIN MCEWEN, LLP
1400 EYE STREET, NW
SUITE 300
WASHINGTON, DC 20005

APPLICATION NO. 12450,273
FILING DATE 09/18/2009
FIRST NAMED INVENTOR Wonjae Baek
ATTORNEY DOCKET NO. 0366.1007
CONFIRMATION NO. 9046

TITLE OF INVENTION: METHOD OF PROVIDING MOBILE APPLICATION

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EXAMINER PARAGALLA, MICHAEL A
ART UNIT 2698
CLASS-SUBCLASS 455-41000

1. Change of correspondence address or indication of “Fee Address” (37 CFR 1.363).
   a. Change of correspondence address (or Change of Correspondence Address Form PTO/SB/122) attached.
   b. “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
   a. the names of up to 3 registered patent attorneys or agents OR, alternatively,
   b. the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

   1. Stein McEwen, LLP
   2. 
   3. 

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
   PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document 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
   SK Planet Co., Ltd.

   (B) RESIDENCE: (CITY AND STATE OR COUNTRY)
   Seoul, Republic of Korea

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

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   - [ ] Issue Fee
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   - [ ] A check is enclosed.
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   - [ ] The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 503333 (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(a).
   b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(a)(2).

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Authorized Signature

[Signature]

Typed or printed name
Christopher D. Reaves

Date 1/9/13
Registration No. 67,548

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PTOL-85 (Rev. 02/11) Approved for use through 08/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
### Electronic Patent Application Fee Transmittal

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**Title of Invention:** METHOD OF PROVIDING MOBILE APPLICATION

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**Title of Invention:** METHOD OF PROVIDING MOBILE APPLICATION

**First Named Inventor/Applicant Name:** Wonjang Baek

**Customer Number:** 49455

**Filer:** Christopher David Reaves

**Filer Authorized By:**

**Attorney Docket Number:** 0366.1007

**Receipt Date:** 09-JAN-2013

**Filing Date:** 18-SEP-2009

**Time Stamp:** 09:55:48

**Application Type:** U.S. National Stage under 35 USC 371

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**Warnings:**

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**Total Files Size (in bytes):** 212746

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**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 the Application of:

Wonjang BAEK et al.

Application No. 12/450,273

Confirmation No. 9046

Filed: September 18, 2009

For: METHOD OF PROVIDING MOBILE APPLICATION

Group Art Unit: 2617

Examiner: Michael A. Faragalla

SUPPLEMENTAL AMENDMENT

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

Attention: BOX AF

Sir:

This is an Amendment in response to the Office Action mailed July 9, 2012 and the Advisory Action mailed October 25, 2012, having a period for response set to expire on November 9, 2012 with a one-month extension of time, payment for which is enclosed.

Reconsideration of the claims is respectfully requested. The following remarks are respectfully submitted.
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**CROSS REFERENCE(S)**

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

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NONE

Assistant Examiner

Primary Examiner Art Unit 2698

(Primary Examiner)

Office Date: 12/06/2012

Total Claims Allowed:

10

O.G. Print Claim(s): 1

O.G. Print Figure: 1
NOTICE OF ALLOWANCE AND FEE(S) DUE

12/12/2012

STEIN MC EWEN, LLP
1400 EYE STREET, NW
SUITE 300
WASHINGTON, DC 20005

EXAMINER

PARACALLA, MICHAEL A

ART UNIT

PAPER NUMBER

2698

DATE MAILED: 12/12/2012

APPLICATION NO. 12/450,273
FILING DATE 09/18/2009
FIRST NAMED INVENTOR Wonjang Baek
ATTORNEY DOCKET NO. 0366.1007
CONFIRMATION NO. 9046

TITLE OF INVENTION: METHOD OF PROVIDING MOBILE APPLICATION

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 1.311 AND MPEP 1308.

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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

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Alexandria, Virginia 22313-1450

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(571)-273-885

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WASHINGTON, DC 20005

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(Date)

(APPLICANT'S NAME)

(Applicant's Signature)

APPLICATION NO. 12/450,273
FILING DATE 09/18/2009
FIRST NAMED INVENTOR Wonjang Baek
ATTORNEY DOCKET NO. 0966.1007
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EXAMINER FARAGALLA, MICHAEL A
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CLASS-SUBCLASS 455-418000

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   - (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)

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
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   (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): 
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   - Corporation or other private group entity
   - Government

4a. The following fee(s) are submitted:
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   - Publication Fee (No small entity discount permitted)
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4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)
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Authorized Signature ___________________________ Date ____________

Typed or printed name ____________________________________________

Registration No. ________________________________________________

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PTOL-85 (Rev. 02/11) Approved for use through 08/31/2013.

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 364 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 364 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.
Privacy Act Statement

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

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

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

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

1. ☒ This communication is responsive to the after final response filed on 11/08/2012.

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

3. ☒ The allowed claim(s) is/are 1-4, 6 and 8-12. As a result of the allowed claim(s), you may be eligible to benefit from the Patent Prosecution Highway program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PHFeedbacK@uspto.gov.

4. ☐ 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.

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

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

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

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<td>6. ☒ Examiner's Statement of Reasons for Allowance</td>
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<td>4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____</td>
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/Michael Faragalla/
Primary Examiner, Art Unit 2698
DETAILED ACTION

Allowable Subject Matter

1. Claims 1-4, 6, 8-12 are allowed.

2. The following is an examiner’s statement of reasons for allowance:

The best prior art of record, i.e. Hampel et al (Publication number: US 2007/0270133) in view of Chew et al (Publication number: 2006/0293065) do not specifically show the limitations of “storing a plurality of control profiles including a plurality of control nodes represented by identifiers and corresponding to a plurality of scenarios for the application requesting event, wherein a first control node included in a first control profile of the plurality of control profiles is associated with one of: the execution data corresponding to the first control node; a second control profile of the plurality of control profiles different from the first control profile; and a second control node included in the second control profile different from the first control node and extracting one of the plurality of execution data to be provided to the mobile communication terminal, the extracted execution data corresponding to the application requesting event and based on one of the plurality of control profiles corresponding to the application requesting event”.

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 MICHAEL FARAGALLA whose telephone number is (571)270-1107. The examiner can normally be reached on Mon-Fri 7:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Kent Chang can be reached on 571-272-7667. 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.

/Michael Faragalla/
Primary Examiner, Art Unit 2698
**Search Notes**

Application/Control No. 12450273
Applicant(s)/Patent Under Reexamination BAEK ET AL.
Examiner MICHAEL FARAGALLA
Art Unit 2617

### SEARCHED

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### INTERFERENCE SEARCH

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## EAST Search History

**EAST Search History (Prior Art)**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Wonjang BAEK et al.

Application No. 12/450,273

Confirmation No. 9046

Filed: September 18, 2009

For: METHOD OF PROVIDING MOBILE APPLICATION

EXAMINER

Group Art Unit: 2617

Examiner: Michael A. Faragalla

SUPPLEMENTAL AMENDMENT

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

Attention: BOX AF

Sir:

This is an Amendment in response to the Office Action mailed July 9, 2012 and the
Advisory Action mailed October 25, 2012, having a period for response set to expire on
November 9, 2012 with a one-month extension of time, payment for which is enclosed.

Reconsideration of the claims is respectfully requested. The following remarks are
respectfully submitted.
IN THE CLAIMS

Please CANCEL claims 5 and 7, and AMEND claims 1, 3, 4, 6, 8, and 9, in accordance with the following:

1. (Currently Amended) A method for providing a mobile application in an mobile application providing server for providing the mobile application, the method comprising steps of:

   (a) dividing the mobile application into a plurality of execution data and storing the plurality of execution data;

   (b) storing a plurality of control profiles including a plurality of control nodes represented by identifiers and corresponding to a plurality of scenarios for the application requesting event, wherein a first control node included in a first control profile of the plurality of control profiles is associated with one of: the execution data corresponding to the first control node; a second control profile of the plurality of control profiles different from the first control profile; and a second control node included in the second control profile different from the first control node;

   (bc) receiving an application requesting event transmitted from a mobile communication terminal, the mobile communication terminal executing and providing the mobile application;

   (cd) extracting one of the plurality of execution data to be provided to the mobile communication terminal, the extracted execution data corresponding to the application requesting event and based on one of the plurality of control profiles corresponding to the application requesting event; and

   (de) transmitting the extracted execution data to the mobile communication terminal.

2. (Original) The method in accordance with claim 1, wherein each of the plurality of the execution data includes at least one of an executable code, a display data and a resource data for a scene of the mobile application.

3. (Currently Amended) The method in accordance with claim 1, wherein the step (bc) comprises:

   (bc-1) receiving the application requesting event including at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data.
4. (Currently Amended) The method in accordance with claim 3, wherein the step (ed) comprises (ed-1) extracting one of the plurality of the execution data based on at least one of the device identification information, the user identification information and the identification information of the execution data.

5. (Cancelled)

6. (Currently Amended) The method in accordance with claim 51, wherein the control node includes an identification information for one of the plurality of the execution data.

7. (Cancelled)

8. (Currently Amended) The method in accordance with claim 71, wherein each of the plurality of the control profiles or each of the plurality of the control nodes is represented by an identifier, and the association is represented in a form of a link to the identifier.

9. (Currently Amended) A method for providing receiving a mobile application in a mobile communication terminal for receiving providing the mobile application, the method comprising steps of:

(a) generating an application requesting event corresponding to an initial execution data of the mobile application for executing the mobile application and based on an initial control profile of a plurality of control profiles corresponding to the application requesting event;

(b) transmitting the application requesting event to a mobile application providing server for providing the mobile application;

(c) receiving the initial execution data corresponding to the application requesting event from the mobile application providing server and executing the received initial execution data;

(d) generating an additional application requesting event for requesting an additional execution data required during the execution of the initial execution data and based on an additional control profile of a plurality of control profiles corresponding to the additional application requesting event;

(e) transmitting the additional application requesting event to the mobile application providing server; and

(f) receiving the additional execution data of the mobile application corresponding to the additional application requesting event from the mobile application providing server and
executing the received additional execution data,

wherein the plurality of control profiles includes a plurality of control nodes represented by identifiers and corresponding to a plurality of scenarios for the application requesting event, and

wherein a first control node included in a first control profile of the plurality of control profiles is associated with one of: the execution data corresponding to the first control node; a second control profile of the plurality of control profiles different from the first control profile; and a second control node included in the second control profile different from the first control node.

10. (Original) The method in accordance with claim 9, wherein each of the application requesting event and the additional application requesting event includes at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data.

11. (Original) The method in accordance with claim 9, wherein the initial execution data includes at least one of an executable code, a display data and a resource data for an initial screen of the mobile application.

12. (Original) The method in accordance with claim 9, wherein the additional execution data includes at least one of an executable code, a display data and a resource data for an additional screen to be displayed according to a user input during the execution of the mobile application based on the initial execution data.

13. (Cancelled)
REMARKS

In accordance with the foregoing, claims 5 and 7 have been cancelled without prejudice or disclaimer, and claims 1-4, 6, and 8-12 are pending and under consideration. No new matter is presented in this Amendment.

REJECTIONS UNDER 35 U.S.C. §103:

On pages 4-9 of the Office Action, the Examiner rejects claims 1 through 12 under 35 U.S.C. §103(a) in view of Hampel et al. (U.S. Publication No. 2007/0270133) and Chew et al. (U.S. Publication No. 2006/0293065); this rejection is preserved in the Advisory Action. As per an in-person interview with the Examiner on October 9, 2012 and a telephone interview with the Examiner on October 12, 2012, clarifying the meaning and scope of the invention, these rejections are understood to be withdrawn contingent upon the entering of the Examiner’s proposed changes.

AMENDMENTS IN RESPONSE TO EXAMINER INTERVIEWS:

In interviews with the Examiner on October 9, 2012 and October 12, 2012, clarifying the meaning and scope of the invention, the Examiner has proposed changes included in the above amendments to the claims. The claims as amended are understood to be clarified and distinguished from the prior art.

Additional amendments are also included to improve form and clarity.
CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters. If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

STEIN MCEWEN, LLP

Date:  Nov 8, 2012

By:  

Christopher D. Reaves  
Registration No. 67,548

1400 Eye St., N.W.  
Suite 300  
Washington, D.C. 20005  
Telephone: (202) 216-9505  
Facsimile: (202) 216-9510
**Electronic Patent Application Fee Transmittal**

**Application Number:** 12450273  
**Filing Date:** 18-Sep-2009

**Title of Invention:** METHOD OF PROVIDING MOBILE APPLICATION

**First Named Inventor/Applicant Name:** Wonjang Baek  
**Filer:** Christopher David Reaves/Sabrina Maya  
**Attorney Docket Number:** 0366.1007

Filed as Small Entity

### U.S. National Stage under 35 USC 371 Filing Fees

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**Title of Invention:** METHOD OF PROVIDING MOBILE APPLICATION

**First Named Inventor/Applicant Name:** Wonjang Baek

**Customer Number:** 49455

**Filer:** Christopher David Reaves/Sabrina Maya

**Filer Authorized By:** Christopher David Reaves

**Attorney Docket Number:** 0366.1007

**Receipt Date:** 08-NOV-2012

**Filing Date:** 18-SEP-2009

**Time Stamp:** 10:35:50

**Application Type:** U.S. National Stage under 35 USC 371

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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.

**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.
**REPLY/AMENDMENT FEE TRANSMITTAL**

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**AMOUNT ENCLOSED** $75.00

**EXAMINER NAME** Michael A. Faragalla

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### FEE CALCULATION (fees effective 10/05/2012)

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Since an Official Action set an original due date of October 9, 2012, petition is hereby made for an extension to cover the date this reply is filed for which the requisite fee is enclosed (1 month ($150)); (2 months ($570)); (3 months ($1,290)); (4 months ($2,010)); (5 months ($2,730));

$150.00

- If Notice of Appeal is enclosed, add ($630.00)
- If Statutory Disclaimer under Rule 20(d) is enclosed, add fee ($140.00)
- Information Disclosure Statement (Rule 1.17(p)) ($180.00)

**Total of above Calculations** = $150.00

Reduction by 50% for filing by small entity (37 CFR 1.9, 1.27 & 1.28) $75.00

Reduction by 75% for filing by micro entity (37 CFR 1.23(a)(1)) $75.00

**TOTAL FEES DUE** = $75.00

(1) If entry (1) is less than entry (2), entry (3) is "0."
(2) If entry (2) is less than 20, change entry (2) to "20."
(4) If entry (4) is less than entry (5), entry (6) is "0."
(5) If entry (5) is less than 3, change entry (5) to "3."

**METHOD OF PAYMENT**

- [ ] Check enclosed as payment.  [X] Credit Card Payment Form, Form PTO-2038(attached).
- [ ] Charge "TOTAL FEES DUE" to the Deposit Account No. below.
- [ ] No payment is enclosed and no charges to the Deposit Account are authorized at this time (unless specifically required to obtain a filing date).

**GENERAL AUTHORIZATION**

[X] If the above-noted "AMOUNT ENCLOSED" is not correct, the Commissioner is hereby authorized to credit any overpayment or charge any additional fees necessary to:

- Deposit Account No. 503333
- Deposit Account Name STEIN MCEWEN, LLP

[X] The Commissioner is also authorized to credit any overpayments or charge any additional fees required under 37 CFR 1.16 (filing fees) or 37 CFR 1.17 (processing fees) during the prosecution of this application, including any related application(s) claiming benefit hereof pursuant to 35 USC § 120 (e.g., continuations/divisions/CDIs under 37 CFR 1.53(b) and/or continuations/divisions/CDIs under 37 CFR 1.53(d)) to maintain pendency hereof or of any such related application.

**SUBMITTED BY:** STEIN MCEWEN, LLP

- Typed Name: Christopher D. Reaves
- Reg. No.: 67,548

**Signature**

Date: Nov 8, 2012
**PATENT APPLICATION FEE DETERMINATION RECORD**

**APPLICATION AS FILED – PART I**

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  - Number Filed: N/A
  - Number Extra: N/A
  - Rate: N/A
  - Fee: N/A

- **SEARCH FEE**
  - (37 CFR 1.16(c), (g), or (m))
  - Rate: N/A
  - Fee: N/A

- **EXAMINATION FEE**
  - (37 CFR 1.16(b), (g), or (i))
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- **MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))**
  - Rate: N/A
  - Fee: N/A

* If the difference in column 1 is less than zero, enter “0” in column 2.

**APPLICATION AS AMENDED – PART II**

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

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

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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.

**Legal Instrument Examiner:**

/NICHELE PETERSON/

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):

docketing@smiplaw.com
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 26 September 2012 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ✔ The reply was filed after a final rejection. No Notice of Appeal has been filed. 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 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires 3 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.
   c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires 3 months from the mailing date of the prior Advisory Action or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.

   Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT’S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). 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) or (c) 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 amendments 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 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.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after 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 the 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 of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(b)(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:

   See Continuation Sheet.

12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). ______

13. ☐ Other: ______

STATUS OF CLAIMS

14. The status of the claim(s) is (or will be) as follows:

   Claim(s) allowed:
   Claim(s) objected to:
   Claim(s) rejected:
   Claim(s) withdrawn from consideration:

   /Michael Faragalla/
   Primary Examiner, Art Unit 2698
Continuation of 11. does NOT place the application in condition for allowance because: On page 2 of the arguments submitted on 03/01/2012, applicant states that "One skilled in the art would understand a "mobile application" to be an executable software program which is executed on a mobile communication terminal. This interpretation is supported by the description's Background Art where a "mobile application" is defined as "the application executable in the mobile communication terminal." and an application is described as "based on an execution environment such as WJPI, SKVM and GVM." However, the examiner would like to point out that the underlined portion is not claimed.

Further, Hampel shows that MPC 254 interacts with one or more LCS elements 262. Advertising content and other types of location-based service content are accessible in this embodiment from element 264, illustratively designated in the figure as an ad content element via SMSC 256 and MSC 250. See paragraph 48. Therefore, Hampel shows dividing the mobile application into a plurality of execution data and storing the plurality of execution data.

Hampel shows that the MSC 250 initiates the location measurement session by sending a location measurement request to the MPC 254. This request contains information such as a mobile user device ID, user ID and cell ID. Please see paragraphs 79 and 80. Thus, Hampel shows receiving an application requesting event transmitted from a mobile communication terminal. Also, Hampel shows that the MSC 250 performs the routine protocol steps for traffic channel setup. It further provides the mobile user device ID and user ID to all LCSs 262 that provide location-based services to the mobile user device. The LCSs compare the user ID to the subscriber database and reply with an acknowledgement or denial. See paragraph 91. Thus, Hampel shows extracting one of the plurality of execution data to be provided to the mobile communication terminal, the extracted execution data corresponding to the application requesting event.
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Wonjang BAEK et al.

Application No. 12/450,273
 Confirmation No. 9046

Filed: September 18, 2009

For: METHOD OF PROVIDING MOBILE APPLICATION

Docket No.: 0366.1007

Group Art Unit: 2617

Examiner: Michael A. FARAGALLA

RESPONSE AND REQUEST FOR RECONSIDERATION UNDER 37 C.F.R. §1.116

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

Attention: BOX AF

Sir:

This is in response to the Office Action mailed July 9, 2012, and having a period for response set to expire on October 9, 2012.

Reconsideration of the claims is respectfully requested. The following remarks are respectfully submitted.
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):

docketing@smiplaw.com
All participants (applicant, applicant’s representative, PTO personnel):

(1) **MICHAEL FARAGALLA.**

(2) **MICHAEL STEIN (Reg. No. 37,240).**

(3) **CHRISTOPHER REAVES (Reg. No. 67,458).**

(4) _____.

Date of Interview: **09 October 2012.**

Type: □ Telephonic   □ Video Conference   ☒ Personal [copy given to: □ applicant   □ applicant’s representative]

Exhibit shown or demonstration conducted: □ Yes   □ No.

If Yes, brief description: _____.

Issues Discussed  □101 □112 □102 □113 □ Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: **claim 1.**


Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

**Applicant representatives discussed the main concept of the invention as well as potential differences between claimed language and used prior art. Examiner would communicate potential allowable subject matter as well as potential rejections before sending the next communication to applicant.**

---

**Applicant recodarion instructions:** The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

**Examiner recodarion instructions:** Examiners must summarize the substance of any interview of record. A complete and proper recodarion of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recodarion including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/Michael Faragalla/
Primary Examiner, Art Unit 2698
Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.
It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner’s responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Wonjang BAEK et al.

Application No. 12/450,273

Confirmation No. 9046

Filed: September 18, 2009

For: METHOD OF PROVIDING MOBILE APPLICATION

EXAMINER: Michael A. FARAGALLA

Group Art Unit: 2617

RESPONSE AND REQUEST FOR RECONSIDERATION UNDER 37 C.F.R. §1.116

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

Attention: BOX AF

Sir:

This is in response to the Office Action mailed July 9, 2012, and having a period for response set to expire on October 9, 2012.

Reconsideration of the claims is respectfully requested. The following remarks are respectfully submitted.
REMARKS

In accordance with the foregoing, claims 1-12 are pending and under consideration. No new matter is presented in this Amendment.

REJECTIONS UNDER 35 U.S.C. §103:

On pages 4-9 of the Office Action, the Examiner rejects claims 1 through 12 under 35 U.S.C. §103(a) in view of Hampel et al. (U.S. Publication No. 2007/0270133) and Chew et al. (U.S. Publication No. 2006/0293065). The rejection is respectfully traversed and reconsideration is requested.

By way of review, Hampel et al. discloses a system 100 in which advertisements are sent from element 264 to a mobile user device 112. The advertisement are sent via a short message service center (SMSC) 256 to the device 112 according to a detected location of the mobile user device 112 in combination with presence and profile information. (Paragraphs 0042, 0048, 0050; FIG. 2B of Hampel et al.). Such messages are defined as push messages. (Paragraph 0051 of Hampel et al.). While SMS and push messages are described, there is no suggestion that executable code is provided as would be understood by one skilled in the art, and it is unclear if such code could be provided using the SMSC 256.

In contrast, claim 1 recites, among other features, “dividing the mobile application into a plurality of execution data and storing the plurality of execution data” and “receiving an application requesting event transmitted from a mobile communication terminal,” with “the mobile communication terminal executing and providing the mobile application”.

In clarifying the rejection, the Examiner asserts on page 2 of the Office Action that claim 1 does not positively recite that the recited application is “based on an execution environment such as WIPI, SKVM, and GVM” such that the advertisements in element 264 correspond to the execution data of claim 1. However, even assuming arguendo that the Examiner is correct in that the claims are not so restricted, claim 1 does recite “the mobile communication terminal executing and providing the mobile application”. There is no suggestion that such content and advertisements sent via an SMSC 256 are executable code or are executable as an application when received at the mobile user device 112.

As a general proposition, in order to find that a combination discloses a claim, the combination must disclose each element of the claim. In interpreting the references included in
the combination, the Examiner is to broadly interpret the claim, but must do so within the
bounds of reason. In re Morris, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997), MPEP 2111.
Thus, while the Examiner is to avoid reading limitations from the specification into the claims,
the Examiner should not interpret claim limitations so broadly as to contradict or otherwise
render a limitation meaningless as would be understood by those of ordinary skill in the art. See
In re Cortright, 49 USPQ2d 1464, 1467 (Fed. Cir. 1999), In re Zletz, 13 USPQ2d 1320, 1322
(Fed. Cir. 1989), MPEP 2111.01.

In the instant case, one skilled in the art would not confuse advertisements and contents
sent via the SMSC 256 with a mobile application which is divided into a plurality of execution
data, and there is no evidence that such a usage is consistent with either the specification or the
understanding of one skilled in the art. See Dictionary.com (Application defined for computers
as a "computer program with an interface, enabling people to use the computer as a tool to
accomplish a specific task. word processing, spreadsheet, and communications software are all
elements of applications.") (last visited July 23, 2012). Further, there is no evidence that one
skilled in the art would consider advertisements and content as being executable. As such, and
as Chew et al, is not relied upon to disclose such a feature, it is respectfully submitted that, even
given its broadest reasonable interpretation, the combination does not disclose or suggest a
"mobile application [divided] into a plurality of execution data" with "the mobile communication
terminal executing and providing the mobile application" as recited in claim 1.

For at least similar reasons, it is respectfully submitted that the combination does not
disclose or suggest "receiving the initial execution data corresponding to the application
requesting event from the mobile application providing server and executing the received initial
execution data" or "receiving the additional execution data of the mobile application
corresponding to the additional application requesting event from the mobile application
providing server and executing the received additional execution data" as recited in claim 9.

Without admission as to the correctness of the Examiner’s interpretation of Hampel et al.
or Chew et al, in regards to Claims 2-8 and 10-12, it is respectfully submitted that Claims 2-8
and 10-12 are patentable due at least to their depending from corresponding claims 1 and 9.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the
application is in condition for allowance. An early action to that effect is courteously solicited.
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

STEIN MCEWEN, LLP

Date: Sept. 26, 2012

By:

James G. McEwen
Registration No. 41,983

1400 Eye St., N.W.
Suite 300
Washington, D.C. 20005
Telephone: (202) 216-9505
Facsimile: (202) 216-9510
# Electronic Acknowledgement Receipt

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<td>Wonjang Baek</td>
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- Submitted with Payment: no

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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.
**REPLY/AMENDMENT**  
**FEE TRANSMITTAL**

**ATTORNEY**  
**DOCKET NO.** 0366.1007  
**APPLICATION NO.** 12/450,273  
**FILING DATE** September 18, 2009  
**FIRST NAMED INVENTOR** Wonjang BAEK  
**GROUP ART UNIT** 2617  

**AMOUNT ENCLOSED** $0.00  
**EXAMINER NAME** Michael A. FARAGALLA

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### FEE CALCULATION (fees effective 10/02/08)

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Since an Official Action set an original due date of October 9, 2012, petition is hereby made for an extension to cover the date this reply is filed for which the requisite fee is enclosed (1 month ($150)); (2 months ($550)); (3 months ($1,270)); (4 months ($1,980)); (5 months ($2,690));

If Notice of Appeal is enclosed, add ($520.00)

If Statutory Disclaimer under Rule 20(d) is enclosed, add fee ($140.00)

Information Disclosure Statement (Rule 1.17(p)) ($180.00)

Total of above Calculations = $ 0.00

Reduction by 50% for filing by small entity (37 CFR 1.9, 1.27 & 1.28) $ 0.00

Reduction by 75% for filing by micro entity (37 CFR 1.23(a)(1))

**TOTAL FEES DUE** $ 0.00

1. If entry (1) is less than entry (2), entry (5) is "0".
2. If entry (2) is less than 20, change entry (2) to "20".
3. If entry (4) is less than entry (5), entry (6) is "0".
4. If entry (5) is less than 3, change entry (6) to "3".

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### METHOD OF PAYMENT

- [ ] Check enclosed as payment.  
- [ ] Credit Card Payment Form, Form PTO-2038 (attached).

- [ ] Charge "TOTAL FEES DUE" to the Deposit Account No. below.

- [x] No payment is enclosed and no charges to the Deposit Account are authorized at this time (unless specifically required to obtain a filing date).

### GENERAL AUTHORIZATION

- [x] If the above-noted "AMOUNT ENCLOSED" is not correct, the Commissioner is hereby authorized to credit any overpayment or charge any additional fees necessary to:

  | Deposit Account No. | 503333 |
  | Deposit Account Name | STEIN MCEWEN, LLP |

- [x] The Commissioner is also authorized to credit any overpayments or charge any additional fees required under 37 CFR 1.16 (filing fees) or 37 CFR 1.17 (processing fees) during the prosecution of this application, including any related application(s) claiming benefit hereof pursuant to 35 USC § 120 (e.g., continuations/divisionals/CFPs under 37 CFR 1.53(b) and/or continuations/divisionals/CPAs under 37 CFR 1.53(d)) to maintain pendency hereof or of any such related application.

**SUBMITTED BY:** STEIN MCEWEN, LLP

**Typed Name** James G. McEwen  
**Reg. No.** 41,983

**Signature** [Signature]  
**Date** Sept. 26, 2013
PATENT APPLICATION FEE DETERMINATION RECORD

Application or Docket Number 12/450,273
Filing Date 09/18/2009

APPLICATION AS FILED – PART I

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APPLICATION SIZE FEE (37 CFR 1.16(e))
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 “0” in column 2.

APPLICATION AS AMENDED – PART II

AMENDMENT

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Application Size Fee (37 CFR 1.16(e))
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))

LEGAL INSTRUMENT EXAMINER:
THERESA LINDSAY

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):
docketing@smiplaw.com
Office Action Summary

Application No. 12/450,273
Applicant(s) BAEK ET AL.

Examiner MICHAEL FARAGALLA
Art Unit 2617

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 to the final office action will result in ABANDONMENT of the application. Pursuant to 37 CFR 1.113(a), Any reply received by the Office later than three months after the mailing date of this final action, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) [x] Responsive to communication(s) filed on 01 March 2012
2a) [x] This action is FINAL. 2b) [ ] This action is non-final.
3) [ ] An election was made by the applicant in response to a restriction requirement set forth during the interview on __________; the restriction requirement and election have been incorporated into this action.
4) [ ] Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5) [x] Claim(s) 1-12 is/are pending in the application.
   5a) Of the above claim(s) ______ is/are withdrawn from consideration.
6) [ ] Claim(s) ______ is/are allowed.
7) [x] Claim(s) 1-12 is/are rejected.
8) [ ] Claim(s) ______ is/are objected to.
9) [ ] Claim(s) ______ are subject to restriction and/or election requirement.

Application Papers

10) [ ] The specification is objected to by the Examiner.
11) [ ] The drawing(s) filed on ______ is/are: a) [ ] accepted or b) [ ] objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
12) [ ] 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

13) [ ] 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/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

1. This action is in response to the amendment filed on 03/01/2012. This action is made **FINAL**.

**Response to Arguments**

2. Applicant's arguments filed 03/01/2012 have been fully considered but they are not persuasive.

On page 2 of the arguments submitted on 03/01/2012, applicant states that “One skilled in the art would understand a "mobile application" to be an executable software program which is executed on a mobile communication terminal. This interpretation is supported by the description's Background Art where a "mobile application" is defined as "the application executable in the mobile communication terminal," and an application is described as "based on an execution environment such as WIP, SKVM and GVM." However, the examiner would like to point out that the underlined portion is not claimed.

Further, Hampel shows that MPC 254 interacts with one or more LCS elements 262. Advertising content and other types of location-based service content are accessible in this embodiment from element 264, illustratively designated in the figure as an ad content element via SMSC 256 and MSC 250. See paragraph 48.
Therefore, Hampel shows dividing the mobile application into a plurality of execution data and storing the plurality of execution data.

Hampel shows that the MSC 250 initiates the location measurement session by sending a location measurement request to the MPC 254. This request contains information such as a mobile user device ID, user ID and cell ID. Please see paragraphs 79 and 80. Thus, Hampel shows receiving an application requesting event transmitted from a mobile communication terminal. Also, Hampel shows that the MSC 250 performs the routine protocol steps for traffic channel setup. It further provides the mobile user device ID and user ID to all LCSs 262 that provide location-based services to the mobile user device. The LCSs compare the user ID to the subscriber database and reply with an acknowledgement or denial. See paragraph 91. Thus, Hampel shows extracting one of the plurality of execution data to be provided to the mobile communication terminal, the extracted execution data corresponding to the application requesting event.

Claim Rejections - 35 USC § 103

3. 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.

Consider Claim 1, Hampel shows a method for providing a mobile application in an mobile application providing server for providing the mobile application, the method comprising steps of:

(a) Dividing the mobile application into a plurality of execution data and storing the plurality of execution data *(see paragraph 48)*; *(MPC 254 interacts with one or more LCS elements 262. Advertising content and other types of location-based service content are accessible in this embodiment from element 264, illustratively designated in the figure as an ad content element via SMSC 256 and MSC 250)*.

(b) Receiving an application requesting event transmitted from a mobile communication terminal *(see paragraphs 79 and 80)*; *(The MSC 250 initiates the location measurement session by sending a location measurement request to the MPC 254. This request contains information such as a mobile user device ID, user ID and cell ID)*.

(c) Extracting one of the plurality of execution data to be provided to the mobile communication terminal, the extracted execution data corresponding to the application requesting event *(see paragraph 91)*; *(the MSC 250 performs the
routine protocol steps for traffic channel setup. It further provides the mobile user device ID and user ID to all LCSs 262 that provide location-based services to the mobile user device. The LCSs compare the user ID to the subscriber database and reply with an acknowledgement or denial).

(d) Transmitting the extracted execution data to the mobile communication terminal (see paragraphs 91 and 93).

However, Hampel et al do not specifically show that the mobile communication terminal executing and providing the mobile application.

In related art, Chew et al show that the mobile communication terminal executing and providing the mobile application (see figure 2).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Chew et al into the teaching of Hampel et al in order to provide dynamic content to the mobile user (see Chew et al; paragraph 3).

Consider Claim 9, Hampel et al show the method for providing a mobile application in a mobile communication terminal for receiving providing the mobile application, the method comprising steps of:

(a) Generating an application requesting event corresponding to an initial execution data of the mobile application for executing the mobile application (see paragraphs 79 and 80); (The MSC 250 initiates the location measurement session by sending a location measurement request to the
MPC 254. This request contains information such as a mobile user device ID, user ID and cell ID).

(b) Transmitting the application requesting event to a mobile application providing server for providing the mobile application (see paragraph 91); (the MSC 250 performs the routine protocol steps for traffic channel setup. It further provides the mobile user device ID and user ID to all LCSs 262 that provide location-based services to the mobile user device. The LCSs compare the user ID to the subscriber database and reply with an acknowledgement or denial).

(c) Receiving the initial execution data corresponding to the application requesting event from the mobile application providing server and executing the received initial execution data (see paragraph 91); (the MSC 250 performs the routine protocol steps for traffic channel setup. It further provides the mobile user device ID and user ID to all LCSs 262 that provide location-based services to the mobile user device. The LCSs compare the user ID to the subscriber database and reply with an acknowledgement or denial).

(d) Generating an additional application requesting event for requesting an additional execution data required during the execution of the initial execution data (see paragraphs 79 and 80); (The MSC 250 initiates the location measurement session by sending a location measurement request to the MPC 254. This request contains information such as a mobile user device ID, user ID and cell ID).
(e) Transmitting the additional application requesting event to the mobile application providing server \textit{(see paragraphs 91 and 93)}.

(f) Receiving the additional execution data of the mobile application corresponding to the additional application requesting event from the mobile application providing server and executing the received additional execution data \textit{(see paragraphs 91 and 93)}.

However, Hampel et al do not specifically show that the mobile communication terminal.

In related art, Chew et al show that the mobile communication terminal executing and providing the mobile application \textit{(see figure 2)}.

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Chew et al into the teaching of Hampel et al in order to provide dynamic content to the mobile user \textit{(see Chew et al; paragraph 3)}.

Consider Claim 2, 11 and 12, Hampel shows a method in accordance with claim 1, wherein each of the plurality of the execution data includes at least one of an executable code, a display data and a resource data for a scene of the mobile application \textit{(see paragraph 60); (The coupon may be in the form of a message 410 presented on the display of a given subscriber device 112 as shown)}. 


Consider Claims 3, 4, and 10 Hampel shows the method in accordance with claim 1, wherein the step (b) comprises: (b-1) receiving the application requesting event including at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data, wherein the step (c) comprises (c-1) extracting one of the plurality of the execution data based on at least one of the device identification information, the user identification information and the identification information of the execution data \((\text{see paragraphs 79 and 80); (The MSC 250 initiates the location measurement session by sending a location measurement request to the MPC 254. This request contains information such as a mobile user device ID, user ID and cell ID}).\)

Consider Claims 5 and 6, Hampel shows the method in accordance with claim 1, further comprising (e) storing a plurality of control profiles including a plurality of control nodes corresponding to a plurality of scenarios for the application requesting event prior to carrying out the step (b), and the step (c) comprises (c-2) extracting one of the plurality of the execution data based on one of the plurality of control profiles corresponding to the application requesting event, wherein the control node includes an identification information for one of the plurality of the execution data \((\text{see paragraph 16); (profile information is obtained for users associated with respective mobile user devices associated with a wireless network, and location information is obtained}}\)
for the mobile user devices. At least one message is controllably delivered to a given one of the mobile user devices based on the location information and the profile information. The location information is obtained for respective ones of the mobile user devices responsive to location determinations initiated by those devices).

Consider Claims 7 and 8, Hampel shows the method in accordance with claim 5, wherein a first control node included in a first control profile of the plurality of control profiles is associated with one of: the execution data corresponding the first control node; a second control profile of the plurality of control profiles different from the first control profile; and a second control node included in the second control profile different from the first control node, wherein each of the plurality of the control profile or each of the plurality of the control node is represented by an identifier, and the association is represented in a form of a link to the identifier (see paragraph 16); (profile information is obtained for users associated with respective mobile user devices associated with a wireless network, and location information is obtained for the mobile user devices. At least one message is controllably delivered to a given one of the mobile user devices based on the location information and the profile information. The location information is obtained for respective ones of the mobile user devices responsive to location determinations initiated by those devices).
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL FARAGALLA whose telephone number is (571)270-1107. The examiner can normally be reached on Mon-Fri 7:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, George Eng can be reached on 571-272-7495. 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.

/Michael Faragalla/
Primary Examiner, Art Unit 2617

07/04/2012
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**INTERFERENCE SEARCH**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:
Wonjang BAEK et al.

Application No. 12/450,273
Confirmation No. 9046
Filed: September 18, 2009

For: METHOD OF PROVIDING MOBILE APPLICATION

AMENDMENT

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

Sir:

This is in response to the Office Action mailed December 9, 2011, and having a period for response set to expire on March 9, 2012.

Reconsideration of the claims is respectfully requested. The following remarks are respectfully submitted.
REMARKS

Claims 1-12 are pending and under consideration. No new matter is presented in this Amendment.

REJECTIONS UNDER 35 U.S.C. §103:

Claims 1-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hampel et al. (U.S. Patent Application Publication No. 2007/0270133) in view of Chew et al. (U.S. Patent Application Publication No. 2006/0293065). The rejection is respectfully traversed and reconsideration is requested.

Claim 1 recites "a method for providing a mobile application". The steps recite, in Step (a), "dividing the mobile application into a plurality of execution data"; in Step (c), "extracting one of the plurality of execution data"; and in Step (d), "transmitting the extracted execution data". It is therefore clear from the plain language of the claim that, in Step (d), the transmission is of a part of the "mobile application" named in Step (a), and that Step (d) therefore recites the transmission of part or all of such a mobile application.

One skilled in the art would understand a "mobile application" to be an executable software program which is executed on a mobile communication terminal. This interpretation is supported by the description's Background Art where a "mobile application" is defined as "the application executable in the mobile communication terminal," and an application is described as "based on an execution environment such as WIPI, SKVM and GVM."

The Examiner asserts that the method of Claim 1 is disclosed in Hampel in view of Chew. However, Hampel does not disclose a method that transmits or receives any part of a mobile application. In all disclosed embodiments of Hampel, any mobile applications (i.e. executable software programs) are already completely stored on the mobile communication terminal before the first step of the disclosed methods, with no disclosure as to how the application was installed on the terminal. See also Claim 9 of Hampel, which discloses a "computer readable storage medium storing one or more software programs which when executed ... implement the method of claim 1" (emphasis added). Hampel, both in Paragraph 0048 and elsewhere, discloses methods executing such applications to a) obtain "profile information" and "location information" and b) receive "at least one message" (e.g., "[a]vertising..."
content and other types of location-based service content") which the application then displays. Content and messages, however, are not mobile applications. At no point does Hampel disclose transmission or reception of any part of a "mobile application", or any action whatsoever involving such an application beyond executing it in its complete and installed form.

Similarly, in all disclosed embodiments of Chew, any mobile applications are already completely stored on the mobile communication terminal before the first step of the disclosed methods, with no disclosure as to how the application was installed on the terminal. Chew instead discloses methods executing such applications to a) obtain "a current location" and "a profile" and b) receive "specific geographically and temporally relevant content" which the application then displays. At no point does Chew disclose transmission or reception of any part of a "mobile application", or any action whatsoever involving such an application beyond executing it in its complete and installed form. Therefore, Hampel in light of Chew does not make obvious a step for transmitting part or all of a mobile application.

Additionally, Claim 1 recites a step of "dividing the mobile application into a plurality of execution data and storing the plurality of execution data" (emphasis added). This step occurs before the transmission of this data "to the mobile communication terminal." As the claim speaks to an "application", as opposed to the plural "applications", it is clear from the plain language of the claim that one application is to be separated into a plurality of data.

The Examiner asserts that such a step is disclosed by Hampel in Paragraph 0048. As already noted, content and messages are not mobile applications, and none of the methods of Hampel speak to dividing a mobile application, or the use of any such application in any way other than to execute its programming. However, even if, as the Examiner appears to assert, the transmitted content of Hampel is a "mobile application," neither Paragraph 0048 nor anything else in Hampel discloses or suggests "dividing" this content before storing or transmitting it. Rather, those skilled in the art would understand Hampel, in lieu of language to the contrary, to store any unit of content without division and provide it in a single transmission, as is the conventional method of storing and transmitting data. Similarly, nothing in Chew discloses or suggests "dividing" either mobile applications or content; to the extent that the content is "distributed" (see Paragraph 0021), each unit of content was created independently of the others, and was never part of a greater unit.

Therefore, without admission as to the correctness of the Examiner's interpretation of
Hampel or Chew in regards to other elements of Claim 1, it is respectfully submitted that the combination of Hampel and Chew does not disclose, suggest, or make obvious either the division or subsequent transmission of a mobile application, as recited in Claim 1.

Claim 9 also recites "a method for providing a mobile application". The steps within recite, in Step (c), "receiving the initial execution data corresponding to the application requesting event"; in Step (a), this "initial execution data" is "of the mobile application". It is therefore clear from the plain language of the claim that, in Step (c), the reception is that of a part of the "mobile application" named in Step (a), and that Step (c) therefore recites the reception of part or all of such a mobile application. As established above with Claim 1, neither Hampel nor Chew discloses a method for transmitting or receiving any part of a mobile application. Therefore, Hampel in light of Chew does not make obvious a step for receiving part or all of a mobile application.

Additionally, Claim 9 recites a Step (d) of "generating an additional application requesting event for requesting an additional execution data required during the execution of the initial execution data" (emphasis added). This step occurs after a Step (a) of "generating an application requesting event corresponding to an initial execution data of the mobile application for executing the mobile application". Step (d) is dependent on Step (a) having already occurred, as it requires "additional execution data" which is needed "during the execution of the initial execution data [of Step (a)]", and Step (a) is insufficient without Step (d), as Step (d)'s execution data is "required during the execution of the initial execution data" (emphasis added). It is therefore clear from the plain language of the claim that the recited method uses multiple requesting events, rather than one, in order to receive all necessary execution data.

The Examiner asserts that Steps (a) and (d) are both disclosed by the same initialization of a "location measurement session" in Paragraphs 0079 and 0080 of Hampel. However, nothing in Paragraphs 0079 and 0080 of Hampel, or anywhere else, suggests the existence or usefulness of "additional" initializations or sessions. Rather, those skilled in the art would understand Hampel, in lieu of language to the contrary, to make one request for such content and receive said content in a single transmission, as is the conventional method for requesting and receiving data. Similarly, nothing in Chew discloses or suggests multiple requesting events.

Therefore, without admission as to the correctness of the Examiner's interpretation of Hampel or Chew in regards to other elements of Claim 9, it is respectfully submitted that the
combination of Hampel and Chew does not disclose, suggest, or make obvious either the reception of part or all of a mobile application, or the request for additional such parts, as recited in Claim 9.

Without admission as to the correctness of the Examiner’s interpretation of Hampel or Chew in regards to Claims 2-8 and 10-12, it is respectfully submitted that Claims 2-8 and 10-12 are patentable due at least to their depending from corresponding claims 1 and 9.

Accordingly, this rejection is respectfully requested to be withdrawn.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

STEIN MCEWEN, LLP

Date: 3/1/12

By: [Signature]

Michael D. Stein
Registration No. 37,240

1400 Eye St., N.W.
Suite 300
Washington, D.C. 20005
Telephone: (202) 216-9505
Facsimile: (202) 216-9510
**Electronic Acknowledgement Receipt**

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**Title of Invention:** METHOD OF PROVIDING MOBILE APPLICATION

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<th>Wonjang Baek</th>
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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.

**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.
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49455 7590 12/09/2011
STEIN MCEWEN, LLP
1400 EYE STREET, NW
SUITE 300
WASHINGTON, DC 20005

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):
docketing@smiplaw.com
Office Action Summary

Application No. 12/450,273
Applicant(s) BAEK ET AL.
Examiner MICHAEL FARAGALLA
Art Unit 2617

--- 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.
- 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 18 September 2009.
2a) □ This action is FINAL.
2b) □ This action is non-final.
3) □ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
4) □ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5) □ Claim(s) 1-12 is/are pending in the application.
   5a) Of the above claim(s) _____ is/are withdrawn from consideration.
6) □ Claim(s) _____ is/are allowed.
7) □ Claim(s) 1-12 is/are rejected.
8) □ Claim(s) _____ is/are objected to.
9) □ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10) □ The specification is objected to by the Examiner.
11) □ The drawing(s) filed on 18 September 2009 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).
12) □ 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

13) □ 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: _______.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 03-11) Office Action Summary Part of Paper No./Mail Date 20111205
DETAILED ACTION

Claim Rejections - 35 USC § 103

1. 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.


Consider Claim 1, Hampel shows a method for providing a mobile application in an mobile application providing server for providing the mobile application, the method comprising steps of:

(a) Dividing the mobile application into a plurality of execution data and storing the plurality of execution data (see paragraph 48); (MPC 254 interacts with one or more LCS elements 262. Advertising content and other types of location-based service content are accessible in this embodiment from element 264, illustratively designated in the figure as an ad content element via SMSC 256 and MSC 250).
(b) Receiving an application requesting event transmitted from a mobile communication terminal \(\textit{see paragraphs 79 and 80}; \) \(\textit{The MSC 250 initiates the location measurement session by sending a location measurement request to the MPC 254. This request contains information such as a mobile user device ID, user ID and cell ID}.\)

(c) Extracting one of the plurality of execution data to be provided to the mobile communication terminal, the extracted execution data corresponding to the application requesting event \(\textit{see paragraph 91}; \) \(\textit{the MSC 250 performs the routine protocol steps for traffic channel setup. It further provides the mobile user device ID and user ID to all LCSs 262 that provide location-based services to the mobile user device. The LCSs compare the user ID to the subscriber database and reply with an acknowledgement or denial}.\)

(d) Transmitting the extracted execution data to the mobile communication terminal \(\textit{see paragraphs 91 and 93}.\)

However, Hampel et al do not specifically show that the mobile communication terminal executing and providing the mobile application.

In related art, Chew et al show that the mobile communication terminal executing and providing the mobile application \(\textit{see figure 2}.\)

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Chew et al into the teaching of Hampel et al in order to provide dynamic content to the mobile user \(\textit{see Chew et al; paragraph 3}.\)
Consider Claim 9, Hampel et al show the method for providing a mobile application in a mobile communication terminal for receiving providing the mobile application, the method comprising steps of:

(a) Generating an application requesting event corresponding to an initial execution data of the mobile application for executing the mobile application (see paragraphs 79 and 80); (The MSC 250 initiates the location measurement session by sending a location measurement request to the MPC 254. This request contains information such as a mobile user device ID, user ID and cell ID).

(b) Transmitting the application requesting event to a mobile application providing server for providing the mobile application (see paragraph 91); (the MSC 250 performs the routine protocol steps for traffic channel setup. It further provides the mobile user device ID and user ID to all LCSs 262 that provide location-based services to the mobile user device. The LCSs compare the user ID to the subscriber database and reply with an acknowledgement or denial).

(c) Receiving the initial execution data corresponding to the application requesting event from the mobile application providing server and executing the received initial execution data (see paragraph 91); (the MSC 250 performs the routine protocol steps for traffic channel setup. It further provides the mobile user device ID and user ID to all LCSs 262 that provide location-based services to the mobile user device. The LCSs compare the user ID to the subscriber database and reply with an acknowledgement or denial).
(d) Generating an additional application requesting event for requesting an additional execution data required during the execution of the initial execution data (see paragraphs 79 and 80); (The MSC 250 initiates the location measurement session by sending a location measurement request to the MPC 254. This request contains information such as a mobile user device ID, user ID and cell ID).

(e) Transmitting the additional application requesting event to the mobile application providing server (see paragraphs 91 and 93).

(f) Receiving the additional execution data of the mobile application corresponding to the additional application requesting event from the mobile application providing server and executing the received additional execution data (see paragraphs 91 and 93). However, Hampel et al do not specifically show that the mobile communication terminal. In related art, Chew et al show that the mobile communication terminal executing and providing the mobile application (see figure 2).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Chew et al into the teaching of Hampel et al in order to provide dynamic content to the mobile user (see Chew et al; paragraph 3).

Consider Claim 2, 11 and 12, Hampel shows a method in accordance with claim 1, wherein each of the plurality of the execution data includes at least one of an executable code, a display data and a resource data for a scene of the mobile
application \(\text{(see paragraph 60)}\); \(\text{(The coupon may be in the form of a message 410 presented on the display of a given subscriber device 112 as shown).}\)

Consider Claims 3, 4, and 10 Hampel shows the method in accordance with claim 1, wherein the step (b) comprises: (b-1) receiving the application requesting event including at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data, wherein the step (c) comprises (c-1) extracting one of the plurality of the execution data based on at least one of the device identification information, the user identification information and the identification information of the execution data \(\text{(see paragraphs 79 and 80)}\); \(\text{(The MSC 250 initiates the location measurement session by sending a location measurement request to the MPC 254. This request contains information such as a mobile user device ID, user ID and cell ID).}\)

Consider Claims 5 and 6, Hampel shows the method in accordance with claim 1, further comprising (e) storing a plurality of control profiles including a plurality of control nodes corresponding to a plurality of scenarios for the application requesting event prior to carrying out the step (b), and the step (c) comprises (c-2) extracting one of the plurality of the execution data based on one of the plurality of control profiles corresponding to the application requesting event, wherein the control node includes an identification information for one of the plurality of the execution data \(\text{(see}\)
Consider Claims 7 and 8, Hampel shows the method in accordance with claim 5, wherein a first control node included in a first control profile of the plurality of control profiles is associated with one of: the execution data corresponding the first control node; a second control profile of the plurality of control profiles different from the first control profile; and a second control node included in the second control profile different from the first control node, wherein each of the plurality of the control profile or each of the plurality of the control node is represented by an identifier, and the association is represented in a form of a link to the identifier (see paragraph 16); (profile information is obtained for users associated with respective mobile user devices associated with a wireless network, and location information is obtained for the mobile user devices. At least one message is controllably delivered to a given one of the mobile user devices based on the location information and the profile information. The location information is obtained for respective ones of
the mobile user devices responsive to location determinations initiated by those devices).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL FARAGALLA whose telephone number is (571)270-1107. The examiner can normally be reached on Mon-Fri 7:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, George Eng can be reached on 571-272-7495. 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.
**Notice of References Cited**

**U.S. PATENT DOCUMENTS**

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**NON-PATENT DOCUMENTS**

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

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*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.*
Search Notes

Application/Control No. 12450273
Applicant(s)/Patent Under Reexamination BAEK ET AL.

Examiner MICHAEL FARAGALLA
Art Unit 2617

SEARCHED

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**Examiner Signature** /Michael Faragalla/  
**Date Considered** 12/05/2011

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 921.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours 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, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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*If necessary, add pages and lines.*

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.F./
### EAST Search History

#### EAST Search History (Prior Art)

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**APPLICANTS**
- Wonjiang Baek, Gyeonggi-do, KOREA, REPUBLIC OF;
- John Kim, Seoul, KOREA, REPUBLIC OF;
- Seong Baek Lee, Seoul, KOREA, REPUBLIC OF;

**CONTINUING DATA**
- This application is a 371 of PCT/KR2008/001618 03/21/2008

**FOREIGN APPLICATIONS**

**IF REQUIRED, FOREIGN FILING LICENSE GRANTED**
- 01/22/2010

**ADDRESS**
STEIN MCEWEN, LLP
1400 EYE STREET, NW
SUITE 300
WASHINGTON, DC 20005
UNITED STATES

**TITLE**
METHOD OF PROVIDING MOBILE APPLICATION

**FILING FEE RECEIVED**
490

**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)
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NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/18/2011.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/sbrahim/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101
NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/18/2011.

• The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record (37 CFR 1.33).

/sibrahim/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101
POWER OF ATTORNEY BY ASSIGNEE OF ENTIRE INTEREST AND REVOCATION OF PRIOR POWERS

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

Sir:

The undersigned corporation is the assignee of record of the entire right, title, and interest of the patent applications and patents identified listed in the enclosed Attachment A:

REVOCATION OF PRIOR POWERS OF ATTORNEY

revokes all powers of attorney previously given, and

NEW POWER OF ATTORNEY

appoints the attorneys and/or agents of STEIN MCEWEN LLP under Customer No. 49,455 to prosecute and transact all business in the United States Patent and Trademark Office connected therewith.

CORRESPONDENCE CHANGE OF ADDRESS

All correspondence and telephone communications should be directed to the address associated with Customer Number 49,455, which is currently:

STEIN MCEWEN LLP
1400 EYE ST., N.W.
SUITE 300
WASHINGTON, D.C. 20005
PHONE: (202) 216-9505
FACSIMILE: (202) 216-9510
STATEMENT AND CERTIFICATION UNDER 37 CFR §3.73(B)

ANYPOINT MEDIA GROUP, a United States corporation, certifies that it is the assignee of the entire right, title and interest in the patent applications and patents identified in the enclosed Attachment A, by way of assignments, and those assignments were recorded in the USPTO with available data identified in the Attachment A and/or are attached hereto as indicated in Attachment A.

The undersigned is empowered to sign this certificate on behalf of the assignee.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

If there are any fees associated with the filing of this Statement and Certification, please charge and/or credit the same to Deposit Account No. 503333.

Dated 08/16/11

By:  

Name: HAN JUN-SIK 

Title: Managing Director

Page 2 of 2
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# Electronic Acknowledgement Receipt

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**Title of Invention:** METHOD OF PROVIDING MOBILE APPLICATION

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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 the Application of:

Wonjang BAEK et al.

Application No. 12/450,273

Confirmation No. 9046

Filed: September 18, 2009

Examiner: Michael A. Faragalla

For: METHOD OF PROVIDING MOBILE APPLICATION

LETTER TO THE EXAMINER REQUESTING ENTRY OF CHANGE IN POWER OF ATTORNEY AND CORRESPONDENCE ADDRESS

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

Sir:

In accordance with the enclosed Power of Attorney, it is respectfully submitted that the attorneys of Stein McEwen, LLP, customer number 49,455, are associated with the instant application and all prior powers of attorney have been revoked.

Please direct all correspondence to the address associated with customer number 49,455, which is presently as follows:

Stein McEwen, LLP
1400 Eye St., NW
Suite 300
Washington, D.C.  20005

Date: August 18, 2011

Respectfully submitted,

STEH MCEWEN, LLP

By: ____________________________

Michael D. Stein
Registration No. 37,240

1400 Eye St. N.W., Suite 300
Washington, D.C.  20005
Telephone: (202) 216-9505
Facsimile: (202) 216-9510
Title: METHOD OF PROVIDING MOBILE APPLICATION

Publication No: US-2010-0112995-A1
Publication Date: 05/06/2010

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO’s publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO’s Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101
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CONFIRMATION NO. 9046
CORRECTED FILING RECEIPT

Date Mailed: 02/24/2010

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections.

Applicant(s)

Wonjung Baek, Gyeonggi-do, KOREA, REPUBLIC OF;
John Kim, Seoul, KOREA, REPUBLIC OF;
Seong Baek Lee, Seoul, KOREA, REPUBLIC OF;

Assignment For Published Patent Application

DREAMER, Burbank, CA

Power of Attorney: The patent practitioners associated with Customer Number 20529

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/KR2008/001618 03/21/2008

Foreign Applications

REPUBLIC OF KOREA 10-2007-0027896 03/22/2007

If Required, Foreign Filing License Granted: 01/22/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 12/450,273

Projected Publication Date: 05/06/2010

Non-Publication Request: No

Early Publication Request: No

** SMALL ENTITY **
METHOD OF PROVIDING MOBILE APPLICATION

PRELIMINARY CLASS

455

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process simplifies the filing of patent applications on the same invention in member countries, but does not result in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application’s filing receipt contains further information and guidance as to the status of applicant’s license for foreign filing.

Applicants may wish to consult the USPTO booklet, “General Information Concerning Patents” (specifically, the section entitled “Treaties and Foreign Patents”) for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help “toolkits” giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as
set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Wonjang BAEK, et al.

Conf. No.: 9046

Appl. No.: 12/450,273

Examiner: TBD

Filed: September 18, 2009

Art Unit: 2617

Title: METHOD OF PROVIDING MOBILE APPLICATION

TRANSMITTAL LETTER

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

Dear Commissioner:

Submitted herewith for filing in the U.S. Patent and Trademark Office is the following:

(1) Request for a Corrected Official Filing Receipt, two (2) pages;
(2) Copy of the Official Filing Receipt with corrections marked in red, three (3) pages.

The Commissioner is hereby authorized to charge any deficiency or credit any excess to Deposit Account No. 14-0112.

Respectfully submitted,
THE NATH LAW GROUP

Date: February 16, 2010
THE NATH LAW GROUP
112 S. West Street
Alexandria, Virginia 22314
Tel: (703) 548-6284
Fax: (703) 683-8396
JLM/DR/jag

Jerald L. Meyer
Registration No. 41,194
Derek Richmond
Registration No. 45,771
Customer No. 20529
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Wonjang BAEK, et al. Conf. No.: 9046
Appl. No.: 12/450,273 Examiner: TBD
Filed: September 18, 2009 Art Unit: 2617

Title: METHOD OF PROVIDING MOBILE APPLICATION

REQUEST FOR A CORRECTED OFFICIAL FILING RECEIPT

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

Dear Commissioner:

1. Attached is a copy of the Official Filing Receipt for the above-captioned application, with changes to be made indicated in red ink. A Corrected Official Filing Receipt is hereby requested.

2. There is an error with respect to the following data, which is: _ incorrectly entered or X omitted.

Error in:
3rd Inventor's name: Seong Baek

Correct Data: SEONG BAEK LEE
The Commissioner is hereby authorized to charge any deficiency or credit any excess to Deposit Account No. 14-0112.

Respectfully submitted,
THE NATH LAW GROUP

Jerald L. Meyer
Registration No. 41,194
Derek Richmond
Registration No. 45,771
Customer No. 20529

Date: February 16, 2010
THE NATH LAW GROUP
112 S. West Street
Alexandria, Virginia 22314
Tel: (703) 548-6284
Fax: (703) 683-8396
JLM/DR/jag
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Applicant(s)

Wojang Baek, Gyeonggi-do, KOREA, REPUBLIC OF;
John Kim, Seoul, KOREA, REPUBLIC OF;
Seong-Hoon, Seoul, KOREA, REPUBLIC OF;

Assignment For Published Patent Application
DREAMER, Burbank, CA

Power of Attorney: The patent practitioners associated with Customer Number 20529

Domestic Priority data as claimed by applicant
This application is a 371 of PCT/KR2008/001618 03/21/2008

Foreign Applications
REPUBLIC OF KOREA 10-2007-0027896 03/22/2007

If Required, Foreign Filing License Granted: 01/22/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 12/450,273

Projected Publication Date: 05/06/2010

Non-Publication Request: No

Early Publication Request: No
** SMALL ENTITY **
METHOD OF PROVIDING MOBILE APPLICATION

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process simplifies the filing of patent applications on the same invention in member countries, but does not result in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

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For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

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set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).
NOTICE OF ACCEPTANCE OF APPLICATION UNDER 35 U.S.C 371 AND 37 CFR 1.495

The applicant is hereby advised that the United States Patent and Trademark Office in its capacity as a Designated / Elected Office (37 CFR 1.495), has determined that the above identified international application has met the requirements of 35 U.S.C. 371, and is ACCEPTED for national patentability examination in the United States Patent and Trademark Office.

The United States Application Number assigned to the application is shown above and the relevant dates are:

09/18/2009
DATE OF RECEIPT OF 35 U.S.C. 371(c)(1),
(c)(2) and (c)(4) REQUIREMENTS

09/18/2009
DATE OF COMPLETION OF ALL
35 U.S.C. 371 REQUIREMENTS

A Filing Receipt (PTO-103X) will be issued for the present application in due course. THE DATE APPEARING ON THE FILING RECEIPT AS THE "FILING DATE" IS THE DATE ON WHICH THE LAST OF THE 35 U.S.C. 371 (c)(1), (c)(2) and (c)(4) REQUIREMENTS HAS BEEN RECEIVED IN THE OFFICE. THIS DATE IS SHOWN ABOVE. The filing date of the above identified application is the international filing date of the international application (Article 11(3) and 35 U.S.C. 363). Once the Filing Receipt has been received, send all correspondence to the Group Art Unit designated thereon.

The following items have been received:

• Indication of Small Entity Status
• Copy of the International Application filed on 09/18/2009
• Copy of the International Search Report filed on 09/18/2009
• Preliminary Amendments filed on 09/18/2009
• Information Disclosure Statements filed on 09/18/2009
• Oath or Declaration filed on 09/18/2009
• Request for Immediate Examination filed on 09/18/2009
• Copy of references cited in ISR filed on 09/18/2009
• U.S. Basic National Fees filed on 09/18/2009
• Substitute Specification filed on 09/18/2009
• Assignee Statement for PGPUB filed on 09/18/2009
• Priority Documents filed on 09/18/2009
• Power of Attorney filed on 09/18/2009
Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

SHAKEEL AHMED

______________________________
Telephone: (703) 756-1423
CONFIRMATION NO. 9046

FILING RECEIPT

Date Mailed: 01/27/2010

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections.

Applicant(s)

Wonjang Baek, Gyeonggi-do, KOREA, REPUBLIC OF;
John Kim, Seoul, KOREA, REPUBLIC OF;
Seong Baek, Seoul, KOREA, REPUBLIC OF;

Assignment For Published Patent Application

DREAMER, Burbank, CA

Power of Attorney: The patent practitioners associated with Customer Number 20529

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/KR2008/001618 03/21/2008

Foreign Applications

REPUBLIC OF KOREA 10-2007-0027896 03/22/2007

If Required, Foreign Filing License Granted: 01/22/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 12/450,273

Projected Publication Date: 05/06/2010

Non-Publication Request: No

Early Publication Request: No

** SMALL ENTITY **
METHOD OF PROVIDING MOBILE APPLICATION

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process simplifies the filing of patent applications on the same invention in member countries, but does not result in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as
set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371

ATTORNEY'S DOCKET NUMBER

30399U

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

Not yet assigned

INTERNATIONAL APPLICATION NO.

PCT/KR2008/001618

INTERNATIONAL FILING DATE

21 March 2008 (21.03.2008)

PRIORITY DATE CLAIMED

22 March 2007 (22.03.2007)

TITLE OF INVENTION

METHOD OF PROVIDING MOBILE APPLICATION (as amended)

APPLICANT(S) FOR DO/EO/US

BAEK, Wonjang; KIM, John; LEE, Seong Baek

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☑ This is a FIRST submission of items concerning a submission under 35 U.S.C. 371.
2. ☐ This is a SECOND or SUBSEQUENT submission of items concerning a submission under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☑ The US has been elected (Article 31).
5. ☑ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. ☐ is attached hereto (required only if not communicated by the International Bureau).
   b. ☑ has been communicated by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
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   a. ☐ is attached hereto.
   b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☑ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. ☐ are attached hereto (required only if not communicated by the International Bureau).
   b. ☑ have been communicated by the International Bureau.
   c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☑ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☑ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☑ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 20 below concern document(s) or information included:

15. ☑ A substitute specification.
16. ☑ A power of attorney and/or change of address letter.
17. ☑ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 CFR 1.821-1.825.

This collection of information is required by 37 CFR 1.414 and 1.491-1.492. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 15 minutes to complete, including gathering information, preparing, and submitting the completed 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 22213-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22213-1450.
The following fees have been submitted

<table>
<thead>
<tr>
<th>CALCULATIONS</th>
<th>PTO USE ONLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. Basic national fee (37 CFR 1.492(a))</td>
<td>$330.00</td>
</tr>
<tr>
<td>22. Examination fee (37 CFR 1.492(c))</td>
<td>$220.00</td>
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<tr>
<td>23. Search fee (37 CFR 1.492(b))</td>
<td>$430.00</td>
</tr>
<tr>
<td>TOTAL OF 21, 22 AND 23</td>
<td>$980.00</td>
</tr>
</tbody>
</table>

Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing in compliance with 37 CFR 1.821(c) or (e) or computer program listing in an electronic medium) (37 CFR 1.492(j)). The fee is $270 for each additional 50 sheets of paper or fraction thereof.

<table>
<thead>
<tr>
<th>Total Sheets</th>
<th>Extra Sheets</th>
<th>Number of each additional 50 or fraction thereof (round up to a whole number)</th>
<th>RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 - 100 =</td>
<td>0 /50 =</td>
<td>0</td>
<td>$270</td>
</tr>
</tbody>
</table>

Surcharge of $130.00 for furnishing any of the search fee, examination fee, or the oath or declaration after the date of commencement of the national stage (37 CFR 1.492(h)).

<table>
<thead>
<tr>
<th>CLAIMS</th>
<th>NUMBER FILED</th>
<th>NUMBER EXTRA</th>
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<tr>
<td>Total claims</td>
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<td>MULTIPLE DEPENDENT CLAIM(S) (if applicable)</td>
<td>0 + $390</td>
<td>$390</td>
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TOTAL OF ABOVE CALCULATIONS = $980.00

Applicant claims small entity status. See 37 CFR 1.27. Fees above are reduced by ½.

SUBTOTAL = $490.00

Processing fee of $130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(1)).

TOTAL NATIONAL FEE = $490.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31), $40.00 per property.

TOTAL FEES ENCLOSED = $530.00

Amount to be refunded: $ 
Amount to be charged: $
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.

<p>| | |</p>
<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>a.</td>
<td>☒ A check in the amount of $530.00 to cover the above fee is enclosed.</td>
</tr>
<tr>
<td>b.</td>
<td>☐ Please charge my Deposit Account No. __________ in the amount of $________ to cover the above fees. A duplicate copy of this sheet is enclosed.</td>
</tr>
<tr>
<td>c.</td>
<td>☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-0112. A duplicate copy of this sheet is enclosed.</td>
</tr>
<tr>
<td>d.</td>
<td>☐ Fees are to be charged to a credit card. 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. The PTO-2038 should only be mailed or faxed the USPTO. However, when paying the basic national fee, the PTO-2038 may NOT be faxed to the USPTO.</td>
</tr>
</tbody>
</table>

**ADVISORY:** If filing by EFS-Web, do NOT attach the PTO-2038 form as a PDF along with your EFS-Web submission. Please be advised that this is not recommended and by doing so your credit card information may be displayed via PAIR. To protect your information, it is recommended paying fees online by using the electronic payment method.

**NOTE:** Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.

SEND ALL CORRESPONDENCE TO:

**Customer No. 20529**

**Signature**

**Jerald L. Meyer**

**Name**

**41,194**

**Registration Number**
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Wonjang BAEK, et al.               Conf. No.: Not Yet Assigned

Appl. No.: Not Yet Assigned          Examiner: Not Yet Assigned

Filed: September 18th, 2009          Art Unit: Not Yet Assigned


Intl. Filing Date: 21 March 2008

For: METHOD OF PROVIDING MOBILE APPLICATION (as amended)

TRANSMITTAL LETTER

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

Dear Commissioner:

Submitted herewith for filing in the U.S. Patent and Trademark Office is the following:

(1) PTO Form-1390, three (3) pages;

(2) Application Data Sheet, six (6) pages;

(3) Cover Page of International Publication No.: WO 2008/115033 A1, one (1) page;

(4) Preliminary Amendment, fifty-four (54) pages, to be Examined, including twenty-one (21) pages of Substitute Specification – Clean Copy and twenty-two (22) pages of Substitute Specification – Marked-up Copy;

(5) One (1) Executed Declaration and Power of Attorney, two (2) pages;
(6) One (1) Executed Assignment, two (2) pages, with a Recordation Cover Sheet, one (1) page, in favor of DREAMER of Burbank, California; 12/450273

(7) Information Disclosure Statement, four (4) pages;

(8) Form PTO/SB/08a, with two (2) references cited, one (1) page;

(9) Copies of two (2) cited Information Disclosure Statement references;

(10) Form PCT/ISA/210 (International Search Report), two (2) pages;

(11) Form PCT/IB/306 (Notification of the Recording of a Change), one (1) page;

(12) Our check no. 8987 in the amount of $530.00 for the filing fees as a small entity ($490.00), as well as the recordation fee ($40.00); and

(13) Early Notification Postcard.

In the event this paper is not timely filed, Applicants petition for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 14-0112.

Respectfully submitted,

THE NATH LAW GROUP

Jerald L. Meyer, Reg. No. 41,194
Derek Richmond, Reg. No. 45,771
Customer No. 20529

Date: September 18, 2009

THE NATH LAW GROUP
112 S. West Street, Alexandria, Virginia 22314
Tel: (703) 548-6284; Fax: (703) 683-8396
JLM/DR/bd
TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/OE/US)
CONCERNING A SUBMISSION UNDER 35 U.S.C. 371

<table>
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<tr>
<th>INTERNATIONAL APPLICATION NO.</th>
<th>INTERNATIONAL FILING DATE</th>
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**ATTORNEY'S DOCKET NUMBER**
30399U

**U.S. APPLICATION NO.** (if known, see 37 CFR 1.5)
Not yet assigned

**TITLE OF INVENTION**
METHOD OF PROVIDING MOBILE APPLICATION (as amended)

**APPLICANT(S) FOR DO/OE/US**
BAEK, Wonjang; KIM, John; LEE, Seong Baek

Applicant herewith submits to the United States Designated/Elected Office (DO/OE/US) the following items and other information:

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4. ☒ The US has been elected (Article 31).
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   c. ☑ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☑ have not been made and will not be made.
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9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
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Items 11 to 20 below concern document(s) or information included:

15. ☒ A substitute specification.
16. ☐ A power of attorney and/or change of address letter.
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Cover Sheet of International Publication No. WO 2008/115033 A1; PCT/ISA/210 (International Search Report); PCT/IB/306 (Notification of the Recording of a Change); Transmittal Letter; Postcard for early notification of serial number; Copy of cited IDS references

<table>
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<tr>
<td>22. Examination fee (37 CFR 1.492(c))</td>
<td>$220</td>
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<td>All other situations</td>
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<tr>
<td>23. Search fee (37 CFR 1.492(b))</td>
<td>$430</td>
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<td>All other situations</td>
<td>$540</td>
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</table>

**TOTAL OF 21, 22 AND 23 =**

$980.00

Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing in compliance with 37 CFR 1.821(c) or (e) or computer program listing in an electronic medium) (37 CFR 1.492(i)).

The fee is $270 for each additional 50 sheets of paper or fraction thereof.

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</thead>
<tbody>
<tr>
<td>23 - 100</td>
<td>0</td>
<td>0</td>
<td>X $270</td>
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Surcharges of $310.00 for any of the search fee, examination fee, or the oath or declaration after the date of commencement of the national stage (37 CFR 1.492(h)).

**CLAIMS**

<table>
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<tr>
<th>CLAIMS</th>
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<th>NUMBER EXTRA</th>
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<td>12 - 20</td>
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<td>x $ 52</td>
<td>$ 0.00</td>
</tr>
<tr>
<td>Independent claims</td>
<td>2 - 3</td>
<td>0</td>
<td>x $220</td>
<td>$ 0.00</td>
</tr>
<tr>
<td>MULTIPLE DEPENDENT CLAIM(S) (if applicable)</td>
<td>0</td>
<td>+ $390</td>
<td>$ 0.00</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL OF ABOVE CALCULATIONS =**

$980.00

* Applicant claims small entity status. See 37 CFR 1.27. Fees above are reduced by 1/3.

**SUBTOTAL =**

$490.00

Processing fee of $130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i)).

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$490.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.32, 3.33), $40.00 per property

**TOTAL FEES ENCLOSED =**

$530.00

Amount to be refunded: $ |

Amount to be charged: $ |

*Word version Copyright 2007 Forms in Word (www.formsindword.com).*
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.

a. ☒ A check in the amount of $530.00 to cover the above fee is enclosed.

b. ☐ Please charge my Deposit Account No. _________ in the amount of $___________ to cover the above fees.  
   A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account no. 14-0112.  A duplicate copy of this sheet is enclosed.

d. ☐ Fees are to be charged to a credit card. 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. The PTO-2038 should only be mailed or faxed to the USPTO. However, when paying the basic national fee, the PTO-2038 may NOT be faxed to the USPTO.

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NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b) must be filed and granted to restore the International Application to pending status.

SEND ALL CORRESPONDENCE TO:

Customer No. 20529

[Jerald L. Meyer]

NAME

41,194

REGISTRATION NUMBER
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:  

Wonjang BAEK, et al.  

Conf. No.: Not Yet Assigned  

Examiner: Not Yet Assigned  

Appl. No.: Not Yet Assigned  

Art Unit: Not Yet Assigned  

Filed: September 18, 2009  


Intl. Filing Date: 21 March 2008  

For: METHOD OF PROVIDING MOBILE APPLICATION (as amended)

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P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Commissioner:

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(2) Application Data Sheet, six (6) pages;

(3) Cover Page of International Publication No.: WO 2008/115033 A1, one (1) page;

(4) Preliminary Amendment, fifty-four (54) pages, to be Examined, including twenty-one (21) pages of Substitute Specification – Clean Copy and twenty-two (22) pages of Substitute Specification – Marked-up Copy;

(5) One (1) Executed Declaration and Power of Attorney, two (2) pages;
One (1) Executed Assignment, two (2) pages, with a Recordation Cover Sheet, one (1) page, in favor of DREAMER of Burbank, California; 12/450273

(7) Information Disclosure Statement, four (4) pages;

(8) Form PTO/SB/08a, with two (2) references cited, one (1) page;

(9) Copies of two (2) cited Information Disclosure Statement references;

(10) Form PCT/ISA/210 (International Search Report), two (2) pages;

(11) Form PCT/IB/306 (Notification of the Recording of a Change), one (1) page;

(12) Our check no. 8987 in the amount of $530.00 for the filing fees as a small entity ($490.00), as well as the recordation fee ($40.00); and

(13) Early Notification Postcard.

In the event this paper is not timely filed, Applicants petition for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 14-0112.

Respectfully submitted,

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Date: September 18, 2009

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Application Data Sheet
Application Information

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Domestic Priority Information

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First Name:: Jerald L. Last Name:: Meyer
Registration No.:: 41,194 Date (MM/DD/YY):: 09/18/09
METHOD OF PROVIDING MOBILE APPLICATION AND COMPUTER-READABLE MEDIUM HAVING THEREON PROGRAM PERFORMING FUNCTION EMBODYING THE SAME

Abstract: A method of providing a mobile application and a computer-readable medium having thereon a program performing a function embodying the same are disclosed. In accordance with the method of the present invention, a transmission time and a loading time of the mobile application, and a limitation on a number and a size of the mobile application are minimized, and providing the personalized mobile application is possible.
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN re Application of:

Wonjang BAEK, et al. Conf. No.: Not Yet Assigned

Appl. No.: Not Yet Assigned Examiner: Not Yet Assigned

Filed: September 19, 2009 Art Unit: Not Yet Assigned


Intl. Filing Date: 21 March 2008

For: METHOD OF PROVIDING MOBILE APPLICATION (as amended)

PRELIMINARY AMENDMENT

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

Dear Commissioner:

Prior to examination on the merits and calculating the filing fee for the national phase application under 35 USC 371, filed herewith, please enter the following amendments:

Amendments to the Specification begin on page 2 of this paper.

An Abstract appears on page 4 of this paper.

Amendments to the Claims begin on page 5 of this paper.

Remarks begin on page 10 of this paper.

A Conclusion appears on page 11 of this paper.
Amendments to the Specification:

On page 1 of the Specification, please insert the cross-reference to the prior application after the title and before the heading of the first paragraph (Technical Field) by adding the following:

-- This is a National Phase Application filed under 35 USC 371 of International Application No. PCT/KR2008/001618, filed on March 21, 2008, which claims foreign priority benefit under 35 USC 119 of Korean Application No. 10-2007-0027896, filed on March 22, 2007, the entire content of each of which is hereby incorporated herein by reference in its entirety. --
In the Specification:

Please enter the twenty-one (21) pages of a Substitute Specification attached hereto; following the Conclusion page of this amendment.
ABSTRACT:

Please place the following Abstract on a new last page of the Application.

A method of providing a mobile application is disclosed. In accordance with the method of the present invention, a transmission time and a loading time of the mobile application, and a limitation on a number and a size of the mobile application are minimized, and providing the personalized mobile application is possible.
Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Original) A method for providing a mobile application in an mobile application providing server for providing the mobile application, the method comprising steps of:

   (a) dividing the mobile application into a plurality of execution data and storing the plurality of execution data;

   (b) receiving an application requesting event transmitted from a mobile communication terminal, the mobile communication terminal executing and providing the mobile application;

   (c) extracting one of the plurality of execution data to be provided to the mobile communication terminal, the extracted execution data corresponding to the application requesting event; and

   (d) transmitting the extracted execution data to the mobile communication terminal.

2. (Original) The method in accordance with claim 1, wherein each of the plurality of the execution data includes at least one of an executable code, a display data and a resource data for a scene of the mobile application.
3. (Original) The method in accordance with claim 1, wherein the step (b) comprises:

   (b-1) receiving the application requesting event including at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data.

4. (Original) The method in accordance with claim 3, wherein the step (c) comprises (c-1) extracting one of the plurality of the execution data based on at least one of the device identification information, the user identification information and the identification information of the execution data.

5. (Original) The method in accordance with claim 1, further comprising (e) storing a plurality of control profiles including a plurality of control nodes corresponding to a plurality of scenarios for the application requesting event prior to carrying out the step (b), and

   the step (c) comprises (c-2) extracting one of the plurality of the execution data based on one of the plurality of control profiles corresponding to the application requesting event.

6. (Original) The method in accordance with claim 5, wherein the control node
includes an identification information for one of the plurality of the execution data.

7. (Original) The method in accordance with claim 5, wherein a first control node included in a first control profile of the plurality of control profiles is associated with one of: the execution data corresponding the first control node; a second control profile of the plurality of control profiles different from the first control profile; and a second control node included in the second control profile different from the first control node.

8. (Original) The method in accordance with claim 7, wherein each of the plurality of the control profile or each of the plurality of the control node is represented by an identifier, and the association is represented in a form of a link to the identifier.

9. (Original) A method for providing a mobile application in a mobile communication terminal for receiving providing the mobile application, the method comprising steps of:
   
   (a) generating an application requesting event corresponding to an initial execution data of the mobile application for executing the mobile application;

   (b) transmitting the application requesting event to a mobile application providing server for providing the mobile application;

   (c) receiving the initial execution data corresponding to the application requesting event from the mobile application providing server and executing the
received initial execution data;

(d) generating an additional application requesting event for requesting an additional execution data required during the execution of the initial execution data;

(e) transmitting the additional application requesting event to the mobile application providing server; and

(f) receiving the additional execution data of the mobile application corresponding to the additional application requesting event from the mobile application providing server and executing the received additional execution data.

10. (Original)  The method in accordance with claim 9, wherein each of the application requesting event and the additional application requesting event includes at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data.

11. (Original)  The method in accordance with claim 9, wherein the initial execution data includes at least one of an executable code, a display data and a resource data for an initial screen of the mobile application.

12. (Original)  The method in accordance with claim 9, wherein the additional execution data includes at least one of an executable code, a display data and a
resource data for an additional screen to be displayed according to a user input during the execution of the mobile application based on the initial execution data.

13. (Cancelled)
REMARKS

The above amendment has been made to the specification to incorporate by reference the earlier filed applications.

The specification has also been amended in order to incorporate extensive changes. No new matter has been added.

A marked-up substitute specification is attached behind the clean substitute specification to show the changes.

An Abstract has been newly added and is in proper U.S. form.

The amendments to the claims have been made to correspond with the amended specification.

Upon entry of the above amendment, claim 13 is cancelled and claims 1 – 12 are pending in this application. The amendments to the claims do not introduce new matter within the meaning of 35 U.S.C. §132.

Applicants reserve the right to reintroduce any cancelled subject matter to this application or to any child applications.

Accordingly, the examiner is respectfully requested to enter the above amendment before examination.

Favorable consideration is respectfully requested.
CONCLUSION

The Examiner is welcomed to telephone the undersigned attorney if any questions or comments should arise.

In the event this paper is not timely filed, Applicants hereby petition for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 14-0112.

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[DESCRIPTION]

METHOD OF PROVIDING MOBILE APPLICATION

[Technical Field]

The present invention relates to a method of providing a mobile application, and more particularly to a method of providing a mobile application that minimizes a transmission time and a loading time of the mobile application, and a limitation on a number and a size of the mobile application, and is capable of providing the personalized mobile application.

[Background Art]

As a processing performance of a mobile communication terminal is improved, the mobile communication terminal is capable of executing various applications.

For instance, an application provider creates the application based on an execution environment such as WIPI, SKVM and GVM. A user of the mobile communication terminal connects to a mobile communication network to download the application to the mobile communication terminal. The mobile communication terminal executes the application based on the execution environment such as WIPI, SKVM and GVM to provide the application to the user.

Hereinafter, the application executable in the mobile communication terminal is referred to as a "mobile application".

Hereinafter, a mobile application providing server refers to a system of a mobile communication provider that transmits the mobile application to the mobile communication terminal through the mobile communication network or a system of a mobile application provider.
Hereinafter, the mobile communication terminal hereinafter refers to a terminal for receiving the mobile application from the mobile application providing server and executing the received mobile application, which provides the execution environment for the mobile application such as WIP, SKVM and GVM.

A conventional method for providing the mobile application has following drawbacks.

Firstly, a limitation due to limited resource of the mobile communication terminal exists.

Although latest mobile communication terminals has a high performance, a size of the mobile application that may be stored in the mobile communication terminal and a size of the mobile application that may be processed by the mobile communication terminal are limited.

Secondly, a limitation due to a limited bandwidth of the mobile communication network exists.

The bandwidth provided by the mobile communication network is limited. Therefore, the mobile application provider should optimize a configuration of the mobile application such that the user of the mobile communication terminal may receive the mobile application in a short time. That is, the mobile application provider should minimize a screen configuration or an image configuration of the mobile application such that the mobile application is optimized for the bandwidth of the mobile communication network. Therefore, the mobile application provider cannot use various configurations when creating the mobile application.

Accordingly, a provision of the mobile application for processing various functions is suppressed, and only a simple game mobile application having a small size is provided.

Moreover, a time required to load the mobile application in the mobile communication terminal after a selection of the mobile application by the user is excessively long.
That is, since an entirety of the mobile application is received through the mobile communication network and is loaded as a whole, a time required for an execution of the mobile application is excessively long.

[Disclosure of Invention]

[Technical Problem]

It is an object of the present invention to provide a method for providing a mobile application that minimizes a transmission time and a loading time of the mobile application and a limitation on the number and a size of the mobile application, and that is capable of providing a personalized mobile application based on a mobile communication terminal information or a user information.

[Technical Solution]

In order to achieve above-described object of the present invention, there is provided a method for providing a mobile application in an mobile application providing server for providing the mobile application, the method comprising steps of: (a) dividing the mobile application into a plurality of execution data and storing the plurality of execution data; (b) receiving an application requesting event transmitted from a mobile communication terminal, the mobile communication terminal executing and providing the mobile application; (c) extracting one of the plurality of execution data to be provided to the mobile communication terminal, the extracted execution data corresponding to the application requesting event; and (d) transmitting the extracted execution data to the mobile communication terminal.

Preferably, each of the plurality of the execution data includes at least one of an executable code, a display data and a resource data for a scene of the mobile application.
Preferably, the step (b) comprises: (b-1) receiving the application requesting event including at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data.

Preferably, the step (c) comprises (c-1) extracting one of the plurality of the execution data based on at least one of the device identification information, the user identification information and the identification information of the execution data.

In accordance with the method of the present invention further comprises (e) storing a plurality of control profiles including a plurality of control nodes corresponding to a plurality of scenarios for the application requesting event prior to carrying out the step (b), and the step (c) comprises (c-2) extracting one of the plurality of the execution data based on one of the plurality of control profiles corresponding to the application requesting event.

Preferably, the control node includes an identification information for one of the plurality of the execution data.

Preferably, a first control node included in a first control profile of the plurality of control profiles is associated with one of: the execution data corresponding the first control node; a second control profile of the plurality of control profiles different from the first control profile; and a second control node included in the second control profile different from the first control node.

Preferably, each of the plurality of the control profile or each of the plurality of the control node is represented by an identifier, and the association is represented in a form of a link to the identifier.
There is also provided a method for providing a mobile application in a mobile communication terminal for receiving providing the mobile application, the method comprising steps of: (a) generating an application requesting event corresponding to an initial execution data of the mobile application for executing the mobile application; (b) transmitting the application requesting event to a mobile application providing server for providing the mobile application; (c) receiving the initial execution data corresponding to the application requesting event from the mobile application providing server and executing the received initial execution data; (d) generating an additional application requesting event for requesting an additional execution data required during the execution of the initial execution data; (e) transmitting the additional application requesting event to the mobile application providing server; and (f) receiving the additional execution data of the mobile application corresponding to the additional application requesting event from the mobile application providing server and executing the received additional execution data.

Preferably, each of the application requesting event and the additional application requesting event includes at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data.

Preferably, the initial execution data includes at least one of an executable code, a display data and a resource data for an initial screen of the mobile application.

Preferably, the additional execution data includes at least one of an executable code, a display data and a resource data for an additional screen to be displayed according to a user input during the execution of the mobile application based on the initial execution data.
[Advantageous Effects]

As described above, the method for providing the mobile application in accordance with the present invention is advantageous in that the transmission time and the loading time of the mobile application and the limitation on the number and the size of the mobile application are minimized, and the personalized mobile application may be provided based on the mobile communication terminal information or the user information.

[Brief Description of the Drawings]

Fig. 1 is a flow diagram exemplifying a method for providing a mobile application in accordance with the present invention.

Fig. 2 is a flow diagram exemplifying another method for providing a mobile application in accordance with the present invention.

Fig. 3 is a diagram illustrating a concept of providing a mobile application between a mobile application providing server and a mobile communication terminal in accordance with a method for providing a mobile application of the present invention.

Fig. 4 is a diagram illustrating a concept of a control profile in accordance with a method for providing a mobile application of the present invention.

[Description of the reference numerals]

110: data  130: control profile
135: scenario  210: model
213: property  216: control profile dispatcher

[Best Mode for Carrying Out the Invention]

A method for providing a mobile application in accordance with the present invention
will now be described in detail with reference to the accompanied drawings.

Fig. 1 is a flow diagram exemplifying a method for providing a mobile application in accordance with the present invention wherein the method is embodied in a mobile application providing server.

Referring to Fig. 1, the mobile application providing server divides the mobile application into a plurality of execution data and stores the plurality of execution data (S110).

Each of the plurality of the execution data may include an executable code, a display data or a resource data for each scene of the mobile application.

The executable code is an independently executable code to correspond to the scene. That is, the executable code is independently executable for each scene contrary to that of the conventional art that is executable for the entirety of the mobile application. Therefore, the executable code is required for each scene of the mobile application.

The display data is an element displayed on a screen when a mobile application is executed wherein a plurality of scenes corresponding to a user input are divided and stored according to the user input for each scene.

The resource data refers to a data that may be additionally displayed such as a control box, a text box and an image other than the display data.

In accordance with the conventional art, the executable code, the display data and the resource data are integrated into the mobile application. Therefore, the entirety of the mobile application transmitted from the mobile application providing server to the mobile communication terminal. However, in accordance with the present invention, the mobile application is stored by dividing into the display data or the resource data, the executable code
for executing the display data or the resource data instead of being stored as a whole.

Since the mobile application is stored as the plurality of the execution data, the transmission and the execution per execution data are possible.

Although not shown, the mobile application providing server may store, in advance, a control profile for extracting the execution data to correspond to storing the plurality of execution data constituting the mobile application.

The control profile defines a scheme on extracting the plurality of execution data stored in the step S110 to correspond to the application requesting event.

The control profile may include a plurality of control nodes for each mobile application.

For instance, a control profile A is stored for a mobile application A and a control profile B is stored for a mobile application B.

The control profile includes the plurality of control nodes corresponding to the plurality of scenarios for the application requesting event. The execution data to be transmitted is extracted based on the corresponding control node.

In addition, the control profile may be configured based on a user group information in order to provide a personalized service.

For instance, a control profile C may be stored for a user group C and a control profile D may be stored for a user group D.

The control profile based on the user group information may be configured to extract the execution data to be transmitted to the mobile communication terminal, and be used in order to embody the personalized mobile application.

Moreover, the control node includes an identification information of the execution data
corresponding to the control node, and is configured to extract the execution data based thereon.

The extraction of the execution data based on the control profile and the control node will be described in latter portion of specification.

In addition, a first control node may be associated with the corresponding execution data in order to extract the execution data to be transmitted to the mobile communication terminal.

Moreover, the first control node included in a first control profile may be associated with a second control profile.

In addition, the first control node included in the first control profile may be associated with a second control node included the second control profile.

The association may be embodied by expressing the control profile or the control node as an identifier and representing the identifier as a link.

A detailed description will be given with reference to Fig. 4. When a configuration wherein a first control node included in a first control profile is associated with a second control profile or a second control node in the second control profile is employed, the limitation of the conventional art may be overcome. Therefore, the limitation on the size and the number of the mobile application executed in the mobile communication terminal is minimized.

Thereafter, the application requesting event is received from the mobile communication terminal that executes and provides the mobile application (S130).

The application requesting event is generated by the mobile communication terminal. The application requesting event is a request for the execution data provided by the mobile application providing server in order to execute the mobile application.

In order to provide the execution data from the mobile application providing server to
the mobile communication terminal, an information of a user or the mobile communication terminal is required.

Therefore, the application requesting event may include at least one of a device identification information and a user identification information of the mobile communication terminal.

In addition, the mobile communication terminal may request the execution data for another scene while executing the execution data of the mobile application, i.e. while executing the mobile application based on a scene data. In such case, the mobile application providing server provides the corresponding data to the mobile communication terminal.

In order to achieve this, the application requesting event includes an information on the execution data to be received, i.e. an identification information of the execution data.

Thereafter, the mobile application providing server extracts one of the plurality of execution data, which is to be transmitted to the mobile communication terminal, stored in the step S110 to correspond to the application requesting event received in the step S130 (S150).

For instance, when the application requesting event includes at least one of the device identification information, the user identification information and the identification information of the execution data, the mobile application providing server extracts the execution data to be provided to the mobile communication terminal based on at least one of the informations.

When the control profile is stored, the execution data is extracted based on the control profile.

The extraction of the execution data is described in detail below.

In case that the control profile is stored for each mobile application, the application
requesting event includes at least one of the device identification information of the mobile communication terminal, the user identification information of the mobile communication terminal, a user input information and the identification information of the execution data.

Therefore, the mobile application providing server extracts the execution data received in the step S130 by comparing the device identification information, the user identification information, the user input information or the identification information included in the execution data with the control node included in the control profile based on the mobile application.

The similar may be applied to the control profile classified according to the user group.

Thereafter, the mobile application providing server transmits the execution data extracted in the step S150 to the mobile communication terminal (S170).

While the entirety of the mobile application is transmitted from the mobile application providing server to the mobile communication terminal in accordance with the conventional method, only the execution data extracted is transmitted in accordance with the present invention.

The mobile communication terminal executes and provides the execution data transmitted by the mobile application providing server. Thereafter, when the mobile communication terminal requires an additional execution data, the mobile communication terminal again transmits the application requesting event to the mobile application providing server in the step S130. The mobile communication terminal then receives the corresponding additional execution data and provides the received execution data to the viewer.

Therefore, the diadvantages of the conventional art such as the limitation in the size of
the mobile application executable in the mobile communication terminal, the excessive time required to receive and execute the mobile application, and the limitation in the number and the size of the mobile application due to the limited bandwidth or resource may be overcome.

[Mode for the Invention]

Fig. 2 is a flow diagram exemplifying another method for providing the mobile application in accordance with the present invention, wherein the method is embodied in the mobile communication terminal for receiving and providing the execution data from the mobile application providing server.

Referring to Fig. 2, the mobile communication terminal generates the application requesting event for requesting an initial execution data in order to execute the mobile application (S210).

The application requesting event is identical to the application requesting event described with reference to Fig 1.

That is, the application requesting event may include at least one of the device identification information of the mobile communication terminal, the user identification information of the mobile communication terminal, the user input information and the identification information of the execution data.

The mobile application providing server stores the plurality of execution data divided according to the scenes of the mobile application in order to execute the mobile application. The application requesting event is an event for requesting the initial execution data of the plurality of execution data.

The initial execution data may include the executable code, the display data or the
resource data for an initial screen of the mobile application, i.e. for a configuration of a screen initially displayed when the mobile application is executed.

Thereafter, the mobile communication terminal transmits the application requesting event generated in the step S210 to the mobile application providing server (S230).

That is, the mobile communication terminal transmits the application requesting event to the mobile application providing server in order to receive the desired initial execution data.

Thereafter, the mobile communication terminal receives and executes the initial execution data corresponding to the application requesting event transmitted from the mobile application providing server (S250).

The initial execution data is extracted by the mobile application providing server based on at least one of the device identification information of the mobile communication terminal, the user identification information of the mobile communication terminal, the user input information and the identification information of the execution data. The initial execution data extracted by the mobile application providing server is then transmitted to the mobile communication terminal. The mobile communication terminal then receives and executes the initial execution data in the step S250.

Contrary to the configuration of the conventional mobile application, the mobile communication terminal receives only the initial execution data instead of the entirety of the mobile application.

Thereafter, the mobile communication terminal generates an additional application requesting event for requesting the additional execution data that is required during the execution of the initial execution data in the step S250. (S270)
The additional execution data is the executable code, the display data or the resource
data for a screen that is to be additionally displayed to correspond to a user input while executing
the mobile application based on the initial execution data in the mobile communication terminal.

While the additional application requesting event is similar to the application requesting
event, the additional application requesting event differs from the application requesting event in
that the additional execution data is requested instead of the initial execution data.

Thereafter, the mobile communication terminal transmits the additional application
requesting event generated in the step S270 to the mobile application providing server (S280).

That is, the mobile communication terminal transmits the additional application
requesting event to the mobile application providing server in order to receive a desired
additional execution data.

Thereafter, the mobile communication terminal receives and executes the additional
execution data corresponding to the additional application requesting event transmitted from the
mobile application providing server (S290).

The additional execution data extracted by the mobile application providing server based
on at least one of the device identification information of the mobile communication terminal,
the user identification information of the mobile communication terminal, the user input
information and a resource identification information. The additional execution data extracted by
the mobile application providing server is transmitted to the mobile communication terminal, and
the mobile communication terminal receives and executes the additional execution data in the
step S290.

The method for providing the mobile application in accordance with the present
invention is advantageous over the conventional method in the following aspects.

In accordance with the conventional method, the mobile communication terminal receives the entirety of the mobile application from the mobile application providing server as a whole. In accordance with the present invention, the mobile communication terminal receives only the required execution data from the mobile application providing server.

That is, the mobile communication terminal receives and executes the initial execution data in the step S250 to be provided to the viewer. When the mobile communication terminal requires the additional execution data, the mobile communication terminal generates the application requesting event for the required additional execution data in the step S270. The mobile communication terminal then transmits the application requesting event to the mobile application providing server in the step S280. Thereafter, the mobile communication terminal receives the corresponding additional execution data in the step S290 to be provided to the viewer.

The above-described configuration, that is, executing the initial execution data and the additional execution data for each scene, is referred to as a scene-by-scene loading hereinafter.

The conventional method is disadvantageous in that the size of the mobile application that is executable by the mobile communication terminal is limited, an excessive time is required to receive and execute the mobile application, and the number and the size of the mobile application is limited due to the limited bandwidth or the limited resource. However, in accordance with the present invention, the disadvantages are overcome by the scene-by-scene loading.

Fig. 3 is a diagram illustrating a concept of providing the mobile application between the
mobile application providing server and the mobile communication terminal in accordance with
the method for providing a mobile application of the present invention.

Referring to Fig. 3, a plurality of data 110a through 110n, a plurality of control profiles
130a through 130m and a model 210 are shown.

The plurality of data 110a through 110n and the plurality of control profiles 130a
through 130m are embodied in the mobile application providing server.

The plurality of data 110a through 110n correspond to the execution data including the
scene data or a display control data, and include the executable code, the display data or the
resource data for the initial screen and the additional screen of the mobile application, i.e. the
scene.

The plurality of control profiles 130a through 130m selects and provides the plurality of
data 110a through 110n according to a request from the model 210.

For instance, the plurality of control profiles 130a through 130m extracts the mobile
application or the execution data from the plurality of data 110a through 110n and carried out a
control for a screen configuration.

The plurality of control profiles 130a through 130m extracts the mobile application for
each channel or the the personalized mobile application based on the device identification
information or the user identification information. In addition, the configuration of the mobile
application for each function is possible. Moreover, each of the plurality of control profiles 130a
through 130m is capable of associating with other control profiles.

The model 210 may include a property 213 and a control profile dispatcher 216, and
may be embodied in the mobile communication terminal or the mobile application providing
server.

The model 210 includes an information such as a predetermined property and a predetermined specification rather than a variable property. That is, the model 210 is a configuration for processing the mobile application. The model 210 may comprise an information of a property 213 of the mobile application or a control profile dispatcher 216.

The property 213 may include an information of the execution of the mobile application. The control profile dispatcher 216 may include an information of a control of the plurality of control profiles 130a through 130m.

Fig. 4 is a diagram exemplifying the concept of the control profile in accordance with the method for providing the mobile application of the present invention.

Referring to Fig. 4, three control profiles 130a through 130c are shown.

Each of the control profiles 130a through 130c comprises a plurality of control nodes, and each of the control nodes are denoted as a circle.

For instance, let the control profile 130a be assumed as a profile for a mobile application A, the control profile 130b be assumed as a profile for a mobile application B, and the control profile 130c be assumed as a profile for a mobile application C.

In accordance with conventional art, the mobile application is executed independently.

Therefore, the mobile application A is received and executed independently of the mobile application B without the association.

However, in accordance with the present invention, the mobile application is divided into the plurality of execution data according to the scene and the mobile application is associated with each other such that the limitation of the size and the function of the mobile
application are minimized.

For instance, a low-ranking control node 135a of the control profile 130a for the mobile application A may be associated with an intermediate-ranking control node 135b of the control profile 130b for the mobile application B.

In such case, while executing the mobile application A, the screen may be changed to a screen corresponding to a certain function of the mobile application B based on the user input.

This is referred to as a scene-to-scene jumping hereinafter.

Therefore, a design of providing the mobile application may be carried out by considering the function of the mobile application.

In addition, an intermediate-ranking control node 135c of the control profile 130c for the mobile application C may be associated with a top-ranking control node 135b of the control profile 130b for the mobile application B in order to enable the scene-to-scene jumping.

On the other hand, the association may be expressed through an identifier.

For instance, the control profile 130a for the channel A may be expressed as "ncfc://AppA" and the control profile 130b for the channel B as "ncfc://AppB".

In addition, the low-ranking control node 135a of the control profile 130a may be expressed as "ncfc://AppA/A/AA"; and the intermediate-ranking control node 135b of the control profile 130b as "ncfc://AppB/B".

The identifier is configured to correspond to the execution data, i.e. one of the plurality of data 110a through 110n of Fig. 3.

When an event corresponding to the low-ranking control node 135a occurs, the scene-to-scene jumping to the intermediate-ranking control node 135b of the control profile 130b
because the low-ranking control node 135a is associated with the intermediate-ranking control node 135b of the control profile 130b.

In order to achieve this, the low-ranking control node 135a of the control profile 130a may be linked to "ncfc://AppB/B", and the execution data corresponding to the intermediate-ranking control node 135b of the control profile 130b may thus be expressed.

The above-described configuration is useful when a company work process function is embodied using the mobile application.

For instance, a size of the conventional mobile application embodying the company work process function may be excessively large. Therefore, the mobile application may not be executed in the mobile communication terminal.

Moreover, when the mobile application is embodied, for instance, in a form of WAP, the mobile application has a poor user interface.

However, in accordance with the present invention, the company work process function may be embodied using a plurality of the mobile application, and the additional mobile application managing and associating the plurality of the mobile application. Each of the mobile applications may be divided into the plurality of execution data, and be associated to the scene through the control profile. Therefore, the company work process function may be provided by the mobile communication terminal.

While the present invention has been particularly shown and described with reference to the preferred embodiment thereof, it will be understood by those skilled in the art that various changes in form and details may be effected therein without departing from the spirit and scope of the invention as defined by the appended claims.
[Industrial Applicability]

In addition, the transmission time and the loading time of the mobile application and the limitation on the number and a size of the mobile application are minimized in accordance with the method for providing the mobile application, and the personalized mobile application may be provided.

That is, the mobile application providing server stores the mobile application into the execution data corresponding to the control profile, and extracts and provides the execution data required for the execution of the mobile application based on the control profile according to the request of the mobile communication terminal. Therefore, the mobile communication terminal may carry out the scene-by-scene loading of the mobile application to minimize the time required for receiving and loading of the mobile application.

In addition, the mobile application providing server stores the mobile application into the execution data based on the plurality of control profile, and extracts the execution data corresponding to the second control profile through the scene-to-scene jumping according to the request of the mobile communication terminal and provides the extracted execution data to the mobile communication terminal. Therefore, the mobile communication terminal may provide the mobile application including the various functions through the scene-by-scene loading and the scene-to-scene jumping.

Moreover, the mobile communication terminal may minimize the transmission time and the loading time of the mobile application, and the limitation on the number and the size of the mobile application through the scene-by-scene loading and the scene-to-scene jumping.

In addition, the execution data of the mobile application to be provided to the mobile
communication terminal may be selected based on the device identification information and the user identification information of the mobile communication terminal to provide the personalized mobile application.
[DESCRIPTION]

METHOD OF PROVIDING MOBILE APPLICATION AND COMPUTER READABLE MEDIUM HAVING THEREON PROGRAM PERFORMING FUNCTION EMBODYING THE SAME

[Technical Field]

The present invention relates to a method of providing a mobile application and a computer readable medium having thereon a program performing a function embodying the same, and more particularly to a method of providing a mobile application and a computer readable medium having thereon a program performing a function embodying the same that minimizes a transmission time and a loading time of the mobile application, and a limitation on a number and a size of the mobile application, and is capable of providing the personalized mobile application.

[Background Art]

As a processing performance of a mobile communication terminal is improved, the mobile communication terminal is capable of executing various applications.

For instance, an application provider creates the application based on an execution environment such as WIPI, SKVM and GVM. A user of the mobile communication terminal connects to a mobile communication network to download the application to the mobile communication terminal. The mobile communication terminal executes the application based on the execution environment such as WIPI, SKVM and GVM to provide the application to the user.

Hereinafter, the application executable in the mobile communication terminal is referred
to as a "mobile application".

Hereinafter, a mobile application providing server refers to a system of a mobile communication provider that transmits the mobile application to the mobile communication terminal through the mobile communication network or a system of a mobile application provider.

Hereinafter, the mobile communication terminal hereinafter refers to a terminal for receiving the mobile application from the mobile application providing server and executing the received mobile application, which provides the execution environment for the mobile application such as WIPI, SKVM and GVM.

A conventional method for providing the mobile application has following drawbacks.

Firstly, a limitation due to limited resource of the mobile communication terminal exists.

Although latest mobile communication terminals has a high performance, a size of the mobile application that may be stored in the mobile communication terminal and a size of the mobile application that may be processed by the mobile communication terminal are limited.

Secondly, a limitation due to a limited bandwidth of the mobile communication network exists.

The bandwidth provided by the mobile communication network is limited. Therefore, the mobile application provider should optimize a configuration of the mobile application such that the user of the mobile communication terminal may receive the mobile application in a short time. That is, the mobile application provider should minimize a screen configuration or an image configuration of the mobile application such that the mobile application is optimized for the bandwidth of the mobile communication network. Therefore, the mobile application provider
cannot use various configurations when creating the mobile application.

Accordingly, a provision of the mobile application for processing various functions is suppressed, and only a simple game mobile application having a small size is provided.

Moreover, a time required to load the mobile application in the mobile communication terminal after a selection of the mobile application by the user is excessively long.

That is, since an entirety of the mobile application is received through the mobile communication network and is loaded as a whole, a time required for an execution of the mobile application is excessively long.

[Disclosure of Invention]

[Technical Problem]

It is an object of the present invention to provide a method for providing a mobile application that minimizes a transmission time and a loading time of the mobile application and a limitation on the number and a size of the mobile application, and that is capable of providing a personalized mobile application based on a mobile communication terminal information or a user information.

It is yet another object of the present invention to provide a computer-readable medium having thereon a program performing a function embodying a method for providing the mobile application.

[Technical Solution]

In order to achieve above-described object of the present invention, there is provided a method for providing a mobile application in an mobile application providing server for providing the mobile application, the method comprising steps of: (a) dividing the mobile
application into a plurality of execution data and storing the plurality of execution data; (b) receiving an application requesting event transmitted from a mobile communication terminal, the mobile communication terminal executing and providing the mobile application; (c) extracting one of the plurality of execution data to be provided to the mobile communication terminal, the extracted execution data corresponding to the application requesting event; and (d) transmitting the extracted execution data to the mobile communication terminal.

Preferably, each of the plurality of the execution data includes at least one of an executable code, a display data and a resource data for a scene of the mobile application.

Preferably, the step (b) comprises: (b-1) receiving the application requesting event including at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data.

Preferably, the step (c) comprises (c-1) extracting one of the plurality of the execution data based on at least one of the device identification information, the user identification information and the identification information of the execution data.

In accordance with the method of the present invention further comprises (e) storing a plurality of control profiles including a plurality of control nodes corresponding to a plurality of scenarios for the application requesting event prior to carrying out the step (b), and the step (c) comprises (c-2) extracting one of the plurality of the execution data based on one of the plurality of control profiles corresponding to the application requesting event.

Preferably, the control node includes an identification information for one of the plurality of the execution data.
 Preferably, a first control node included in a first control profile of the plurality of control profiles is associated with one of: the execution data corresponding the first control node; a second control profile of the plurality of control profiles different from the first control profile; and a second control node included in the second control profile different from the first control node.

 Preferably, each of the plurality of the control profile or each of the plurality of the control node is represented by an identifier, and the association is represented in a form of a link to the identifier.

 There is also provided a method for providing a mobile application in a mobile communication terminal for receiving providing the mobile application, the method comprising steps of: (a) generating an application requesting event corresponding to an initial execution data of the mobile application for executing the mobile application; (b) transmitting the application requesting event to a mobile application providing server for providing the mobile application; (c) receiving the initial execution data corresponding to the application requesting event from the mobile application providing server and executing the received initial execution data; (d) generating an additional application requesting event for requesting an additional execution data required during the execution of the initial execution data; (e) transmitting the additional application requesting event to the mobile application providing server; and (f) receiving the additional execution data of the mobile application corresponding to the additional application requesting event from the mobile application providing server and executing the received additional execution data.

 Preferably, each of the application requesting event and the additional application
requesting event includes at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data.

Preferably, the initial execution data includes at least one of an executable code, a display data and a resource data for an initial screen of the mobile application.

Preferably, the additional execution data includes at least one of an executable code, a display data and a resource data for an additional screen to be displayed according to a user input during the execution of the mobile application based on the initial execution data.

[Advantageous Effects]

As described above, the method for providing the mobile application in accordance with the present invention is advantageous in that the transmission time and the loading time of the mobile application and the limitation on the number and the size of the mobile application are minimized, and the personalized mobile application may be provided based on the mobile communication terminal information or the user information.

[Brief Description of the Drawings]

Fig. 1 is a flow diagram exemplifying a method for providing a mobile application in accordance with the present invention.

Fig. 2 is a flow diagram exemplifying another method for providing a mobile application in accordance with the present invention.

Fig. 3 is a diagram illustrating a concept of providing a mobile application between a mobile application providing server and a mobile communication terminal in accordance with a method for providing a mobile application of the present invention.
Fig. 4 is a diagram illustrating a concept of a control profile in accordance with a method for providing a mobile application of the present invention.

[Description of the reference numerals]

110: data 130: control profile
135: scenario 210: model
213: property 216: control profile dispatcher

[Best Mode for Carrying Out the Invention]

A method for providing a mobile application and a computer-readable medium having thereon a program performing a function embodying the same in accordance with the present invention will now be described in detail with reference to the accompanied drawings.

Fig. 1 is a flow diagram exemplifying a method for providing a mobile application in accordance with the present invention wherein the method is embodied in a mobile application providing server.

Referring to Fig. 1, the mobile application providing server divides the mobile application into a plurality of execution data and stores the plurality of execution data (S110).

Each of the plurality of the execution data may include an executable code, a display data or a resource data for each scene of the mobile application.

The executable code is an independently executable code to correspond to the scene. That is, the executable code is independently executable for each scene contrary to that of the conventional art that is executable for the entirety of the mobile application. Therefore, the executable code is required for each scene of the mobile application.

The display data is an element displayed on a screen when a mobile application is
executed wherein a plurality of scenes corresponding to a user input are divided and stored according to the user input for each scene.

The resource data refers to a data that may be additionally displayed such as a control box, a text box and an image other than the display data.

In accordance with the conventional art, the executable code, the display data and the resource data are integrated into the mobile application. Therefore, the entirety of the mobile application transmitted from the mobile application providing server to the mobile communication terminal. However, in accordance with the present invention, the mobile application is stored by dividing into the display data or the resource data, the executable code for executing the display data or the resource data instead of being stored as a whole.

Since the mobile application is stored as the plurality of the execution data, the transmission and the execution per execution data are possible.

Although not shown, the mobile application providing server may store, in advance, a control profile for extracting the execution data to correspond to storing the plurality of execution data constituting the mobile application.

The control profile defines a scheme on extracting the plurality of execution data stored in the step S110 to correspond to the application requesting event.

The control profile may include a plurality of control nodes for each mobile application.

For instance, a control profile A is stored for a mobile application A and a control profile B is stored for a mobile application B.

The control profile includes the plurality of control nodes corresponding to the plurality of scenarios for the application requesting event. The execution data to be transmitted is
extracted based on the corresponding control node.

In addition, the control profile may be configured based on a user group information in order to provide a personalized service.

For instance, a control profile C may be stored for a user group C and a control profile D may be stored for a user group D.

The control profile based on the user group information may be configured to extract the execution data to be transmitted to the mobile communication terminal, and be used in order to embody the personalized mobile application.

Moreover, the control node includes an identification information of the execution data corresponding to the control node, and is configured to extract the execution data based thereon.

The extraction of the execution data based on the control profile and the control node will be described in latter portion of specification.

In addition, a first control node may be associated with the corresponding execution data in order to extract the execution data to be transmitted to the mobile communication terminal.

Moreover, the first control node included in a first control profile may be associated with a second control profile.

In addition, the first control node included in the first control profile may be associated with a second control node included the second control profile.

The association may be embodied by expressing the control profile or the control node as an identifier and representing the identifier as a link.

A detailed description will be given with reference to Fig. 4. When a configuration wherein a first control node included in a first control profile is associated with a second control
profile or a second control node in the second control profile is employed, the limitation of the conventional art may be overcome. Therefore, the limitation on the size and the number of the mobile application executed in the mobile communication terminal is minimized.

Thereafter, the application requesting event is received from the mobile communication terminal that executes and provides the mobile application (S130).

The application requesting event is generated by the mobile communication terminal. The application requesting event is a request for the execution data provided by the mobile application providing server in order to execute the mobile application.

In order to provide the execution data from the mobile application providing server to the mobile communication terminal, an information of a user or the mobile communication terminal is required.

Therefore, the application requesting event may include at least one of a device identification information and a user identification information of the mobile communication terminal.

In addition, the mobile communication terminal may request the execution data for another scene while executing the execution data of the mobile application, i.e. while executing the mobile application based on a scene data. In such case, the mobile application providing server provides the corresponding data to the mobile communication terminal.

In order to achieve this, the application requesting event includes an information on the execution data to be received, i.e. an identification information of the execution data.

Thereafter, the mobile application providing server extracts one of the plurality of execution data, which is to be transmitted to the mobile communication terminal, stored in the
step S110 to correspond to the application requesting event received in the step S130 (S150).

For instance, when the application requesting event includes at least one of the device identification information, the user identification information and the identification information of the execution data, the mobile application providing server extracts the execution data to be provided to the mobile communication terminal based on at least one of the informations.

When the control profile is stored, the execution data is extracted based on the control profile.

The extraction of the execution data is described in detail below.

In case that the control profile is stored for each mobile application, the application requesting event includes at least one of the device identification information of the mobile communication terminal, the user identification information of the mobile communication terminal, a user input information and the identification information of the execution data.

Therefore, the mobile application providing server extracts the execution data received in the step S130 by comparing the device identification information, the user identification information, the user input information or the identification information included in the execution data with the control node included in the control profile based on the mobile application.

The similar may be applied to the control profile classified according to the user group.

Thereafter, the mobile application providing server transmits the execution data extracted in the step S150 to the mobile communication terminal (S170).

While the entirety of the mobile application is transmitted from the mobile application providing server to the mobile communication terminal in accordance with the conventional
The mobile communication terminal executes and provides the execution data transmitted by the mobile application providing server. Thereafter, when the mobile communication terminal requires an additional execution data, the mobile communication terminal again transmits the application requesting event to the mobile application providing server in the step S130. The mobile communication terminal then receives the corresponding additional execution data and provides the received execution data to the viewer.

Therefore, the diadvantages of the conventional art such as the limitation in the size of the mobile application executable in the mobile communication terminal, the excessive time required to receive and execute the mobile application, and the limitation in the number and the size of the mobile application due to the limited bandwidth or resource may be overcome.

[Mode for the Invention]

Fig. 2 is a flow diagram exemplifying another method for providing the mobile application in accordance with the present invention, wherein the method is embodied in the mobile communication terminal for receiving and providing the execution data from the mobile application providing server.

Referring to Fig. 2, the mobile communication terminal generates the application requesting event for requesting an initial execution data in order to execute the mobile application (S210).

The application requesting event is identical to the application requesting event described with reference to Fig 1.
That is, the application requesting event may include at least one of the device identification information of the mobile communication terminal, the user identification information of the mobile communication terminal, the user input information and the identification information of the execution data.

The mobile application providing server stores the plurality of execution data divided according to the scenes of the mobile application in order to execute the mobile application. The application requesting event is an event for requesting the initial execution data of the plurality of execution data.

The initial execution data may include the executable code, the display data or the resource data for an initial screen of the mobile application, i.e. for a configuration of a screen initially displayed when the mobile application is executed.

Thereafter, the mobile communication terminal transmits the application requesting event generated in the step S210 to the mobile application providing server (S230).

That is, the mobile communication terminal transmits the application requesting event to the mobile application providing server in order to receive the desired initial execution data.

Thereafter, the mobile communication terminal receives and executes the initial execution data corresponding to the application requesting event transmitted from the mobile application providing server (S250).

The initial execution data is extracted by the mobile application providing server based on at least one of the device identification information of the mobile communication terminal, the user identification information of the mobile communication terminal, the user input information and the identification information of the execution data. The initial execution data
extracted by the mobile application providing server is then transmitted to the mobile
communication terminal. The mobile communication terminal then receives and executes the
initial execution data in the step S250.

Contrary to the configuration of the conventional mobile application, the mobile
communication terminal receives only the initial execution data instead of the entirety of the
mobile application.

Thereafter, the mobile communication terminal generates an additional application
requesting event for requesting the additional execution data that is required during the execution
the initial execution data in the step S250. (S270)

The additional execution data is the executable code, the display data or the resource
data for a screen that is to be additionally displayed to correspond to a user input while executing
the mobile application based on the initial execution data in the mobile communication terminal.

While the additional application requesting event is similar to the application requesting
event, the additional application requesting event differs from the application requesting event in
that the additional execution data is requested instead of the initial execution data.

Thereafter, the mobile communication terminal transmits the additional application
requesting event generated in the step S270 to the mobile application providing server (S280).

That is, the mobile communication terminal transmits the additional application
requesting event to the mobile application providing server in order to receive a desired
additional execution data.

Thereafter, the mobile communication terminal receives and executes the additional
execution data corresponding to the additional application requesting event transmitted from the
mobile application providing server (S290).

The additional execution data extracted by the mobile application providing server based on at least one of the device identification information of the mobile communication terminal, the user identification information of the mobile communication terminal, the user input information and a resource identification information. The additional execution data extracted by the mobile application providing server is transmitted to the mobile communication terminal, and the mobile communication terminal receives and executes the additional execution data in the step S290.

The method for providing the mobile application in accordance with the present invention is advantageous over the conventional method in the following aspects.

In accordance with the conventional method, the mobile communication terminal receives the entirety of the mobile application from the mobile application providing server as a whole. In accordance with the present invention, the mobile communication terminal receives only the required execution data from the mobile application providing server.

That is, the mobile communication terminal receives and executes the initial execution data in the step S250 to be provided to the viewer. When the mobile communication terminal requires the additional execution data, the mobile communication terminal generates the application requesting event for the required additional execution data in the step S270. The mobile communication terminal then transmits the application requesting event to the mobile application providing server in the step S280. Thereafter, the mobile communication terminal receives the corresponding additional execution data in the step S290 to be provided to the viewer.
The above-described configuration, that is, executing the initial execution data and the additional execution data for each scene, is referred to as a scene-by-scene loading hereinafter.

The conventional method is disadvantageous in that the size of the mobile application that is executable by the mobile communication terminal is limited, an excessive time is required to receive and execute the mobile application, and the number and the size of the mobile application is limited due to the limited bandwidth or the limited resource. However, in accordance with the present invention, the disadvantages are overcome by the scene-by-scene loading.

Fig. 3 is a diagram illustrating a concept of providing the mobile application between the mobile application providing server and the mobile communication terminal in accordance with the method for providing a mobile application of the present invention.

Referring to Fig. 3, a plurality of data 110a through 110n, a plurality of control profiles 130a through 130m and a model 210 are shown.

The plurality of data 110a through 110n and the plurality of control profiles 130a through 130m are embodied in the mobile application providing server.

The plurality of data 110a through 110n correspond to the execution data including the scene data or a display control data, and include the executable code, the display data or the resource data for the initial screen and the additional screen of the mobile application, i.e. the scene.

The plurality of control profiles 130a through 130m selects and provides the plurality of data 110a through 110n according to a request from the model 210.

For instance, the plurality of control profiles 130a through 130m extracts the mobile
application or the execution data from the plurality of data 110a through 110n and carried out a control for a screen configuration.

The plurality of control profiles 130a through 130m extracts the mobile application for each channel or the the personalized mobile application based on the device identification information or the user identification information. In addition, the configuration of the mobile application for each function is possible. Moreover, each of the plurality of control profiles 130a through 130m is capable of associating with other control profiles.

The model 210 may include a property 213 and a control profile dispatcher 216, and may be embodied in the mobile communication terminal or the mobile application providing server.

The model 210 includes an information such as a predetermined property and a predetermined specification rather than a variable property. That is, the model 210 is a configuration for processing the mobile application. The model 210 may comprise an information of a property 213 of the mobile application or a control profile dispatcher 216.

The property 213 may include an information of the execution of the mobile application. The control profile dispatcher 216 may include an information of a control of the plurality of control profiles 130a through 130m.

Fig. 4 is a diagram exemplifying the concept of the control profile in accordance with the method for providing the mobile application of the present invention.

Referring to Fig. 4, three control profiles 130a through 130c are shown.

Each of the control profiles 130a through 130c comprises a plurality of control nodes, and each of the control nodes are denoted as a circle.
For instance, let the control profile 130a be assumed as a profile for a mobile application A, the control profile 130b be assumed as a profile for a mobile application B, and the control profile 130c be assumed as a profile for a mobile application C.

In accordance with conventional art, the mobile application is executed independently.

Therefore, the mobile application A is received and executed independently of the mobile application B without the association.

However, in accordance with the present invention, the mobile application is divided into the plurality of execution data according to the scene and the mobile application is associated with each other such that the limitation of the size and the function of the mobile application are minimized.

For instance, a low-ranking control node 135a of the control profile 130a for the mobile application A may be associated with an intermediate-ranking control node 135b of the control profile 130b for the mobile application B.

In such case, while executing the mobile application A, the screen may be changed to a screen corresponding to a certain function of the mobile application B based on the user input.

This is referred to as a scene-to-scene jumping hereinafter.

Therefore, a design of providing the mobile application may be carried out by considering the function of the mobile application.

In addition, an intermediate-ranking control node 135c of the control profile 130c for the mobile application C may be associated with a top-ranking control node 135b of the control profile 130b for the mobile application B in order to enable the scene-to-scene jumping.

On the other hand, the association may be expressed through an identifier.
For instance, the control profile 130a for the channel A may be expressed as "ncfc://AppA" and the control profile 130b for the channel B as "ncfc://AppB".

In addition, the low-ranking control node 135a of the control profile 130a may be expressed as "ncfc://AppA/A/AA", and the intermediate-ranking control node 135b of the control profile 130b as "ncfc://AppB/B".

The identifier is configured to correspond to the execution data, i.e. one of the plurality of data 110a through 110n of Fig. 3.

When an event corresponding to the low-ranking control node 135a occurs, the scene-to-scene jumping to the intermediate-ranking control node 135b of the control profile 130b because the low-ranking control node 135a is associated with the intermediate-ranking control node 135b of the control profile 130b.

In order to achieve this, the low-ranking control node 135a of the control profile 130a may be linked to "ncfc://AppB/B", and the execution data corresponding to the intermediate-ranking control node 135b of the control profile 130b may thus be expressed.

The above-described configuration is useful when a company work process function is embodied using the mobile application.

For instance, a size of the conventional mobile application embodying the company work process function may be excessively large. Therefore, the mobile application may not be executed in the mobile communication terminal.

Moreover, when the mobile application is embodied, for instance, in a form of WAP, the mobile application has a poor user interface.

However, in accordance with the present invention, the company work process function
may be embodied using a plurality of the mobile application, and the additional mobile application managing and associating the plurality of the mobile application. Each of the mobile applications may be divided into the plurality of execution data, and be associated to the scene through the control profile. Therefore, the company work process function may be provided by the mobile communication terminal.

In addition, the present invention provides a computer-readable medium having thereon a program performing function embodying the method for providing the mobile application.

The computer-readable medium refers to various storage mediums for storing a data in a code or a program format that may be read by a computer system. The computer-readable medium may include a memory such as a ROM and a RAM, a storage medium such as CD-ROM and a DVD-ROM, a magnetic storage medium such as a magnetic tape and a floppy disk, and an optical data storage medium. The computer-readable medium may include a data transferred via the Internet. The computer-readable medium may be embodied by a computer-readable data divided and stored over computer systems connected through a network.

Since the computer-readable medium in accordance with the present invention is substantially identical to that of the method in accordance with the present invention described with reference to Figs. 1 through 4, a detailed description thereof is omitted.

While the present invention has been particularly shown and described with reference to the preferred embodiment thereof, it will be understood by those skilled in the art that various changes in form and details may be effected therein without departing from the spirit and scope of the invention as defined by the appended claims.

[Industrial Applicability]
In addition, the transmission time and the loading time of the mobile application and the limitation on the number and a size of the mobile application are minimized in accordance with the method for providing the mobile application, and the personalized mobile application may be provided.

That is, the mobile application providing server stores the mobile application into the execution data corresponding to the control profile, and extracts and provides the execution data required for the execution of the mobile application based on the control profile according to the request of the mobile communication terminal. Therefore, the mobile communication terminal may carry out the scene-by-scene loading of the mobile application to minimize the time required for receiving and loading of the mobile application.

In addition, the mobile application providing server stores the mobile application into the execution data based on the plurality of control profile, and extracts the execution data corresponding to the second control profile through the scene-to-scene jumping according to the request of the mobile communication terminal and provides the extracted execution data to the mobile communication terminal. Therefore, the mobile communication terminal may provide the mobile application including the various functions through the scene-by-scene loading and the scene-to-scene jumping.

Moreover, the mobile communication terminal may minimize the transmission time and the loading time of the mobile application, and the limitation on the number and the size of the mobile application through the scene-by-scene loading and the scene-to-scene jumping.

In addition, the execution data of the mobile application to be provided to the mobile communication terminal may be selected based on the device identification information and the
user identification information of the mobile communication terminal to provide the personalized mobile application.
DECLARATION FOR PATENT APPLICATION

As a below-named inventor(s), I/we hereby declare that:

My/Our residence(s), post office address(es) and citizenship(s) is/are as stated below next to
my/our name(s).

I/We believe I/we am/are the original inventor, first and sole (if only one name is listed
below) or the original, first and joint inventors (if plural names are listed below) of the subject
matter which is claimed, and for which a patent is sought on the invention entitled:

METHOD OF PROVIDING MOBILE APPLICATION

the specification of which: (check one)

[ ] is attached hereto.

[ ] was filed on 21 March 2008, as Serial No. PCT/KR2008/001618

and was amended on ____________________________ (if applicable).

I/We hereby state that we have reviewed and understand the contents of the above-identified
specification, including the claims, as amended by any amendment referred to above.

I/We acknowledge the duty to disclose information which is material to the patentability of
this application as defined by 37 CFR § 1.56.

I/We hereby claim foreign priority benefits under 35 U.S.C. § 119 of any foreign
application(s) for patent or inventor's certificate listed below, and have also identified below any
foreign application for patent or inventor's certificate having a filing date before that of the
application on which priority is claimed:

Prior Foreign Applications:

10-2007-0027896
(Country) 22 / 3 / 2007 [X] [ ]
(Application No.) (Day/Month/Year Filed) Yes No

[ ] [ ]
(Country) (Day/Month/Year Filed) Yes No
(Application No.)

[ ] [ ]
(Country) (Day/Month/Year Filed) Yes No
(Application No.)

I/We hereby appoint the Practitioners associated with the following Customer Number:

Customer Number 20529

Direct Telephone Calls to:

Gary M. Nath
(703) 548-6284

Send Correspondence to:

Customer Number 20529

THE NATH LAW GROUP
112 South West Street
Alexandria, VA 22314
U.S.A.

I/We hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed
below and, insofar as the subject matter of each of the claims of this application is not disclosed
in the prior United States application in the manner provided by 35 U.S.C. § 112, first paragraph,
I/we acknowledge the duty to disclose material information as defined in 37 CFR § 1.56 which
occurred between the filing date of the prior application and the national or PCT international
filing date of this application:

(U.S. Application Serial No.) (U.S. Filing Date) (Status—patented, pending, abandoned)

(U.S. Application Serial No.) (U.S. Filing Date) (Status—patented, pending, abandoned)
I/we hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below:

Application Number(s)  Filing Date

We hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor: BAE, Wonyang
Inventor's Signature: Wonyang Bae Date: 5/12/09
Country of Citizenship: Republic of Korea

Full name of second inventor: KIM, John
Inventor's Signature: John Kim Date: 5/12/09
Residence: SK HUB SU B-1416, 650-4, Guro 1-dong, Guro-gu, Seoul 152-720, Republic of Korea
Country of Citizenship: Republic of Korea
Post Office Address: SK HUB SU B-1416, 650-4, Guro 1-dong, Guro-gu, Seoul 152-720, Republic of Korea

Full name of third inventor: LEE, Seong Bae
Inventor's Signature: Seong Bae Date: 5/12/09
Residence: Mokdong Apts. 704-1403, Mok 1-dong, Yangcheon-gu, Seoul 158-757, Republic of Korea
Country of Citizenship: Republic of Korea
Post Office Address: Mokdong Apts. 704-1403, Mok 1-dong, Yangcheon-gu, Seoul 158-757, Republic of Korea
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

H04Q 7/24 (2006.01)i

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 8 : H04Q 7/24

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

Korean Utility models and applications for Utility Models since 1975

Japanese Utility models and applications for Utility Models since 1975

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

eKIPASS (K IPO internal) "mobile, application, execution data, dividing"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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| Y        | KR 10-0568999 B1 (SK TELECOM CO., LTD.) 03 Apr. 2006
          | See abstract, figures 2-3, claims 1-14, and page 3, lines 2-35                   | 1-4,9-13              |
          | See abstract, figure 2, claims 1-7, and page 3, lines 28-45                     | 1-4,9-13              |
          | See abstract, figure 1, claims 1, 7, and page 4, lines 36-39                    | 1-13                  |
          | See abstract, figures 1, 3, claims 1-7, and paragraphs [0020]-[0022], [0025]-[0027] | 1-13                  |
          | See abstract, figures 2, 4, claims 1-9, and paragraphs [0035]-[0038], [0041]-[0043] | 1-13                  |

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:
  "A" document defining the general state of the art which is not considered to be of particular relevance
  "E" earlier application or patent but published on or after the international filing date
  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or special reason (as specified)
  "O" document referring to an oral disclosure, use, exhibition or other means
  "P" document published prior to the international filing date but later than the priority date claimed

*T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

26 JUNE 2008 (26.06.2008)

Date of mailing of the international search report

26 JUNE 2008 (26.06.2008)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonseong-ro, Seogu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

KIM, Kwang Sik

Telephone No. 82-42-481-8355
<table>
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<tr>
<td>KR 10-0569999 B1</td>
<td>03.04.2006</td>
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<td>KR 10-2004-0046674 A</td>
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<td>US 2002-0174189 A1</td>
<td>21.11.2002</td>
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PCT
NOTIFICATION OF THE RECORDING
OF A CHANGE

(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

Date of mailing (day/month/year)
25 May 2009 (25.05.2009)

IMPORTANT NOTIFICATION

To:
JIMYUNG PATENT FIRM
6F, Jungwoo Bldg., 1689-1
Seocho-4-Dong, Seocho-Gu
Seoul 137-882
RÉPUBLIQUE DE CORÉE

Applicant’s or agent’s file reference
08-PCT-0009

International application No.
PCT/KR2008/001618

International filing date (day/month/year)
21 March 2008 (21.03.2008)

1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

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Seoul 153-782
Republic of Korea

State of NationalityKR
State of ResidenceKR

Telephone No.
82-2-2026-1600

Facsimile No.
82-2-3444-5438

E-mail address  

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒ the person ☐ the name ☐ the address ☐ the nationality ☐ the residence

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Suite 990
Burbank, CA 91505
United States of America

State of NationalityUS
State of ResidenceUS

Telephone No.
1-818-559-7385

Facsimile No.

E-mail address ☐ Notifications by e-mail authorized

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

☒ the receiving Office ☐ the International Preliminary Examining Authority

☒ the International Searching Authority ☐ the designated Offices concerned

☒ the Authority(ies) specified for supplementary search ☐ the elected Offices concerned

☒ other:

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer Nicolo Laurence

Facsimile No. +41 22 338 70 90
e-mail pt12.pct@wipo.int
Telephone No. +41 22 338 74 12

Form PCT/IB/306 (January 2009)
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Wonjang BAEK, et al. Conf. No.: Not Yet Assigned

Appl. No.: Not Yet Assigned Examiner: Not Yet Assigned

Filed: September 18, 2009 Art Unit: Not Yet Assigned


Intl. Filing Date: 21 March 2008

For: METHOD OF PROVIDING MOBILE APPLICATION (as amended)

INFORMATION DISCLOSURE STATEMENT

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

Dear Commissioner:

Pursuant to 37 CFR §§ 1.97 and 1.98, the documents listed on the enclosed Form PTO/SB/08 are submitted for consideration by the Examiner in the examination of the above-identified patent application.

This submission is not a representation that a search has been made, or that better art does or does not exist. In addition, this submission does not constitute an admission that each or all of the listed documents are material or constitute "prior art." If the Examiner applies any of the documents as "prior art" against any claim in this application and Applicant(s) determine that the cited documents do not constitute "prior art" under United States law, Applicant(s) expressly reserve the right to present, to the United States Patent and Trademark Office, the relevant facts and law regarding the appropriate status of such documents. Likewise, Applicant(s) expressly reserve the right to establish an earlier date of invention of any or all of the subject matter disclosed in this application, or any application claiming priority from this application, in order to remove any reference submitted herewith as prior art.

Applicant(s) further reserve the right to take appropriate action to establish the patentability of the disclosed subject matter over the listed documents, should one or more of the documents be applied against the claims of the present application. This submission of documents is not to be taken as a concession that any document represents art that is relevant or analogous to the subject matter claimed at any time throughout the prosecution of this or any application claiming priority from this
application. Accordingly, the right to argue that any document is not properly within the scope of prior art relevant to an examination of the present claims is also expressly reserved.

The Information Disclosure Statement (hereinafter “IDS”) is being filed as follows:

a. [X] The IDS is being filed within three months of the filing date of a national application, or within three months of the date of entry into the national stage as set forth in 37 C.F.R. 1.491 in an international application, or before the mailing date of a first Official Action on the merits, whichever event occurs last.

b. [ ] The IDS is being filed after a first action on the merits but before the mailing date of a final Official Action under 37 C.F.R. 1.113, or a Notice of Allowance under 37 C.F.R. 1.311.

The IDS is accompanied by:

   i. [ ] a certification in part (e) below as specified in 37 C.F.R. 1.97(e),

   or

   ii. [ ] a check in the amount required by 37 C.F.R. 1.17(p).

c. [ ] The IDS is being filed after the mailing date of a final Official Action under 37 CFR 1.113, or a Notice of Allowance under 37 CFR 1.311, but before payment of the issue fee.

The IDS is accompanied by:

   i. [ ] Certification report(e) below;

   and

   ii. [ ] A check in the amount as required by 1.17(p).

d. [ ] The IDS is being filed pursuant to 37 C.F.R. 1.97(i), for placement in the file.

e. Certification:

   [ ] I hereby certify that each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent
office in a counterpart foreign application or in a counterpart United States patent application not more than three months prior to the filing of this statement,

or

[ ] I hereby certify that no item of information cited in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

or

[ ] Appropriate certification is attached.

f. [X] If no check is enclosed and a fee is due in connection with this communication or if the check enclosed is insufficient, the Commissioner is authorized to charge any fee or additional fee due in connection with this communication to Deposit Account No. 14-0112.

g. [X] Copies of the documents are attached herewith with a completed PTO/SB/08

or

[ ] Copies of the documents are not attached, with a completed Form PTO/SB/08 as allowed under CFR 1.98(d)(1) and (2). The earlier application is identified as:

and / or

[ ] Copies of US Patents/Publications are not attached, with a completed Form PTO/SB/08 as allowed in Official Gazette Aug. 5, 2003/ Vol. 1273, no. 1.

h. [ ] A copy of the International Search Report is enclosed herewith.

i. [ ] A copy of the European Search Report or Supplementary European Search Report is enclosed herewith.

The Examiner is respectfully requested to cite the documents listed on the attached Form PTO/SB/08 in the next Official Action. In so doing, the Examiner is respectfully requested to initial in the space adjacent to the listing of each document on
the Form PTO/SB/08, and return a copy of the initialed Form PTO/SB/08 with the next communication to Applicant(s), to confirm that these documents have been considered by the Examiner and made of record in this application.

Should any additional fees be owed in connection with this Information Disclosure Statement, please charge any such fee deficiency to Deposit Account No. 14-0112. Likewise, please credit any overpayment to Deposit Account No. 14-0112.

The Examiner is invited to contact the undersigned attorney at the below-listed telephone number, with regard to any questions that may arise.

Respectfully submitted,

THE NATH LAW GROUP

Jerald L. Meyer
Registration No. 41,194
Derek Richmond
Registration No. 45,771
Customer No. 20529

Date: September 18, 2009
THE NATH LAW GROUP
112 S. West Street
Alexandria, VA 22314
Tel: (703) 548-6284
Fax: (703) 683-8396
JLM/DR/bd
**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

*Use as many sheets as necessary*

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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours 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, 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.

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KOREAN INTELLECTUAL PROPERTY OFFICE

KOREAN PATENT ABSTRACTS

(11)Publication number: 100568999 B1
(44)Date of publication of specification: 03.04.2006

(21)Application number: 1020040079444
(22)Date of filing: 06.10.2004
(30)Priority: ..
(51)Int. Cl: H04Q 7/20
(71)Applicant: SK TELECOM CO., LTD.
(72)Inventor: KIM, YOUNG CHAN NA, SEUNG WON

(54) DYNAMIC FILE COMBINING SYSTEM AND A FILE DOWNLOADING METHOD, SPECIFICALLY WITH REGARDS TO ALLOWING A SERVER TO DYNAMICALLY PROVIDE A DOWNLOADED FILE TO A MOBILE TERMINAL

(57) Abstract:

PURPOSE: A dynamic file combining system and a file downloading method are provided to enable a mobile terminal to store a representative file only of a service program, thus a memory space can be substantially expanded. CONSTITUTION: Each server (400) divides a service program file into plural files, and generates a representative file where an execution sequence and position information of the divided plural files are recorded. A mobile terminal (300) downloads the representative file from each server (400) to interpret the downloaded file, and drives the service program file by individually downloading the divided files when a service program is driven, then deletes the divided files if the service program is terminated.

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Legal Status
Date of request for an examination (20041006)
Notification date of refusal decision ( )
Final disposal of an application (registration)
Date of final disposal of an application (20060329)
Patent registration number (1005689990000)
Date of registration (20060403)
Number of opposition against the grant of a patent ( )
Date of opposition against the grant of a patent ( )
Number of trial against decision to refuse ( )
Date of requesting trial against decision to refuse ( )
Date of extinction of right ( )
(19) 대한민국 특허청 (KR)
(12) 동록 특허공보 (B1)

(51) Int. Cl.
HO4Q 7/20 (2006.01)

(45) 공고일자 2006년 04월 10일
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(24) 동록일자 2006년 04월 03일

(21) 출원번호 10-2004-0079444
(22) 출원일자 2004년 10월 06일

(65) 공개번호
(43) 공개일자

(73) 특허권자
에스케이 텔레콤주식회사
서울 중구 음기로 2가 11번지

(72) 발명자
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김영찬
인천광역시 연수구 동춘동 931 무지개마을 14-202

(74) 대리인
남상선

(56) 선행기술조사문헌
US2004/0002367 A1
US5926624
KR1020040002177
= 심사관에 의하여 인용된 문헌

실사관: 장성원

(54) 동적 파일결합 시스템 및 파일 다운로드 방법

요약

서비스에서 다운로드 파일을 동적으로 이동할 경우에 제공하는 동적 파일결합 시스템 및 파일 다운로드 방법이 개시된다. 이 를 위하여, 서비스 프로그램 파일을 분할하여 복수개의 복합 파일을 생성하고, 상기 복수개의 복합 파일의 위치정보 및 실행 순서가 기록된 대표파일을 생성하는 서버 및 상기 대표파일을 다운로드 받아 해석한 후, 상기 서비스 프로그램 구동시, 상 기 복합파일을 각각 다운로드 받아 상기 서비스 프로그램 파일을 구동 시키고, 상기 서비스 프로그램 종료시 상기 복합파일 을 삭제하는 이동할시기를 포함하는 동적결합 시스템을 제공하고, 서비스 프로그램 파일을 분할하여 복수개의 복합파일 을 생성하고, 상기 복합파일들의 위치정보 및 실행순서가 기록된 대표파일을 생성하는 서버를 포함하는 동적파일결합시스템의 파일 다운로드 방법에 있어서, 상기 대표파일을 다운로드 받는 단계: 상기 다운로드된 대표파일을 해석하는 단계; 및 상기 서비스 프로그램 구동시, 상기 복합파일을 각각 다운로드 받아 상기 서비스 프로그램 파일을 구동 시키는 단계를 포함함으로써, 상기 이동할시기의 메모리 공간을 실질적으로 확대할 수 있다.

대표도

도 2

색인어
동적, 파일결합, 다운로드, 메모리

명세서

도면의 간단한 설명

도0은 종래기술에 따른 다운로드 시스템을 나타내는 도면.

도2는 본 발명에 따른 동적파일 결합 시스템을 나타내는 도면.

도3은 본 발명에 따른 동적파일 결합 시스템의 파일 다운로드 방법을 나타내는 순서도.

도4는 본 발명에 따른 파일 분할방법의 일부를 나타내는 도면.

* 도면의 주요부분에 대한 부호설명 *

300: 이동단말기 310: 대표파일 해석부

320: 체어부 400: 서버

410: 분할파일 생성부 420: 대표파일 생성부

430: 데이터베이스

발명의 상세한 설명

발명의 목적

발명이 속하는 기술 및 그 분야의 종래기술

본 발명은 다운로드 시스템에 관한 것으로, 보다 상세하게는 서버에서 다운로드 파일을 동적으로 이동단말기에 제공하는 동적 파일결합 시스템 및 파일 다운로드 방법에 관한 것이다.

최근에 인터넷과 이동통신 기술의 결합으로 발생한 무선인터넷은 휴대의 편리성을 제공하고 있으나, 하드웨어의 특성상 협소한 메모리 공간으로 인하여 효율적인 자원관리를 수행하지 못한다.

이러한 문제는 하드웨어 및 소프트웨어의 발전에 따라 개선의 여지는 있으나, 휴대성이 고려되는 이동단말기는 충분한 메모리 용량을 확보하는데 한계가 있다. 이를 좀 더 상세히 설명한다.

도0은 종래기술에 따른 다운로드 시스템을 나타내는 도면이다.

도2에 도시한 바와 같이, 상기 다운로드 시스템은, 실행파일을 저장하는 서버(200) 및 마리 저장된 상기 실행파일의 저장 위치를 참조하여 상기 서버로부터 실행파일을 다운로드 받는 이동단말기(100)를 포함한다.

이와 같이 구성된 종래의 다운로드 시스템은, 이동단말기(100)가 서버(200)의 데이터베이스(210)로부터 실행파일 전체를 다운로드 받아 이를 메모리(120)에 저장한 후, 체어부(110)로 하여금 실행파일을 구동시킨다. 그러나, 이와 같이 실행파일 전체를 다운로드 받으면, 다운로드 시간이 길어지는 문제점이 있다.

또한, 다양한 이동통신 서비스를 위하여, 상기 서비스에 해당하는 프로그램의 실행파일들을 서버로부터 이동단말기로 각각 다운로드 된다면, 상기 이동단말기의 하드웨어 특성상 실행파일을 저장할 수 있는 메모리 공간을 보장할 수 없는 문제점이 발생한다.

발명이 이루고자 하는 기술적 과제
본 발명은 상기와 같은 문제점 해결하기 위하여 인출된 것으로, 본 발명의 목적이 이동단말기에서 수행되는 다양한 서비스를 위한 서비스 프로그램 파일들이 상기 메모리에 상주하지 않는 동적 파일결합 시스템 및 이를 이용한 다운로드 방법을 제시하는 데 있다.

발명의 구성 및 작용

상기 목적을 달성하기 위하여, 본 발명에 따르 동적 파일결합 시스템은, 서비스 프로그램 파일을 분할하여 복수개의 분할 파일을 생성하고, 상기 복수개의 분할 파일의 위치정보 및 실행순서가 기록된 대표파일을 생성하는 서비스 및 상기 대표파일을 다운로드 받아 상기 서비스 프로그램 파일을 구동 시키고, 상기 서비스 프로그램 종료시 상기 분할파일을 삭제하는 이동단말기를 포함하는 것을 특징으로 한다.

또한, 서비스 프로그램 파일이 분할되어 복수개의 서비스에 저장되고, 상기 분할파일들의 위치정보 및 실행순서가 기록된 대표파일이 상기 복수개의 서비스들 중 하나의 서비스에 저장된 동적파일 결합시스템은, 상기 대표파일을 다운로드 받아 상기 대표파일을 해석한 후, 상기 서비스 프로그램 구동시, 상기 분할파일을 해당 서비스로부터 각각 다운로드 받아 상기 서비스 프로그램 파일을 구동 시키고, 상기 서비스 프로그램 종료시 상기 저장된 분할파일을 삭제하는 이동단말기를 포함하는 것을 특징으로 한다.

한편, 서비스 프로그램 파일을 분할하여 복수개의 분할파일을 생성하고, 상기 분할파일들의 위치정보 및 실행순서가 기록된 대표파일 생성하는 서비스를 포함하는 동적파일 결합시스템의 파일 다운로드 방법은, 상기 대표파일을 다운로드 받는 단계: 상기 다운로드된 대표파일을 해석하는 단계 및 상기 서비스 프로그램 구동시, 상기 분할파일을 각각 다운로드 받아 상기 서비스 프로그램 파일을 구동 시키는 단계를 포함하는 것을 특징으로 한다.

이때, 상기 서비스 프로그램 종료시 상기 분할파일을 삭제하는 단계를 더 포함하는 것을 특징으로 한다.

또한, 서비스 프로그램 파일이 분할되어 복수개의 서비스에 저장되고, 상기 분할파일들의 위치정보 및 실행순서가 기록된 대표파일이 상기 복수개의 서비스들 중 어느 하나의 서비스에 저장된 동적파일 결합시스템의 파일 다운로드 방법에 있어서, 상기 대표파일을 다운로드 받는 단계: 상기 대표파일을 해석하는 단계 및 상기 서비스 프로그램 구동시, 상기 분할파일을 해당 서비스로부터 각각 다운로드 받아 상기 서비스 프로그램 파일을 구동 시키는 단계를 포함하는 것을 특징으로 한다.

이때, 상기 서비스 프로그램 종료시 상기 분할파일을 삭제하는 단계를 더 포함하는 것을 특징으로 한다.

이하에서는, 첨부도면 및 바람직한 실시예를 참조하여 본 발명을 상세히 설명한다. 도면상에서 동일 또는 유사한 구성요소에 대하여는 동일한 참조번호를 부여하였다.

도2는 본 발명에 따른 동적파일 결합 시스템을 나타내는 도면이다.

도2에 도시한 바와 같이, 상기 시스템은 서비스 프로그램을 위하여 분할된 파일을 제공하는 서비스(400): 서비스 실행시 상기 분할된 파일을 각각 다운로드 받아 상기 서비스를 수행하는 이동단말기(300)를 포함한다.

서비스(400)는, 서비스 프로그램의 파일을 저장기능에 따라 분할하는 분할파일 생성부(410): 상기 분할된 파일들의 위치정보 및 동작순서가 기록된 대표파일을 생성하는 대표파일 생성부(420): 및 상기 분할파일 및 대표파일을 저장하는 데이터 베이스(430)를 포함한다. 이때, 상기 분할된 파일은 반드시 한 서비스 내에 존재할 필요는 없으며, 상기 기준에 따라 복수의 서비스들 가운데 어느 하나의 서비스에 존재할 수도 있다.

예컨대, 리소스 파일이 복수의 서비스에 분산 저장되어 있을 경우에는 그 위치정보만을 상기 대표파일에 기록함으로써, 상기 분산된 파일들이 하나의 서비스에 존재하는 기능을 제공할 수 있다. 여기서, 리소스는 파일 시스템 구조를 포함하는 어플리케이션, 키트, 라이브러리, 기타 리소스를 그 예로 들 수 있다.

이동단말기(300)는, 상기 생성된 대표파일을 다운로드 받아 상기 대표파일을 해석하는 대표파일 해석부(310): 상기 서비스 프로그램 구동시, 상기 서비스로부터 분할된 개별 실행파일을 필요할 경우 각각 다운로드 받아 상기 실행파일을 구동 시키고, 이후 상기 서비스 프로그램 종료시 메모리(330)에 저장된 개별 실행파일들을 삭제하는 제어부(320)를 포함한다.

이와 같이 구성된 동적파일 결합시스템의 동작을 설명한다.
먼저, 최초에 서비스 프로그램 동작 시, 서버(400)는 상기 서비스 프로그램을 분할하여 데이터베이스(430)에 저장한다. 예컨대, 상기 파일을 DLL, OCX와 같이 분할하고, 크기가 큰 EXE 파일일 경우에도 이를 분할한다. 즉, 도4에 도시한 바와 같이, 분할 파일 생성(410)가 하나의 실행파일에 대하여 EXE 파일, 파일링크가 갖는 DLL 및 OCX 파일로 분할하여, 데이터베이스(430)에 저장한다.

이어, 상기 분할된 파일들의 대표파일을 생성한다. 이때, 서비스 프로그램의 동작순서에 따라 상기 대표파일을 생성하는 것이 바람직하다. 예컨대, 상기 대표파일은 파일 맵킹 API(Application Programming Interface)로 제공된다. 이러한 대표 파일은 또 하나의 DLL 파일일 수도 있다. 상기 파일링크 API에는 하나의 실행파일에 대한 언론 관련 규격 및 테이터 타이핑에 대한 정보 역할하는 부분이다.

이후, 이동단말기(300)는 상기 대표파일을 다운로드 받아 사용자로부터 요청된 서비스 프로그램을 다운로드하여 저장하고, 사용자로부터 상기 서비스 프로그램 실행 요청 시, 상기 대표파일을 구동하여 필요한 파일을 상기 서버(400)로부터 전송 받아 상기 서비스 프로그램을 수행할 수 있다.

즉, 사용자가 이동단말기(300)를 통하여 서비스 프로그램 다운로드를 요청하면, 이동단말기(300)는 서버(400)로 상기 서비스 프로그램에 해당하는 대표파일을 요청한다(S501). 그로, 서버(400)는 해당 대표파일을 이동단말기(300)로 전송한다(S502).

이후, 사용자가 상기 서비스 프로그램의 수행을 지시하면, 이동단말기(300)는 상기 대표파일을 실행하고, 대표파일에 기록된 동작순서에 따라 분할된 서비스 프로그램 파일을 상기 서버(400)로 요청한다(S503-S504). 이때, 바람직하게는 상기 분할된 서비스 프로그램 파일이 하나의 서버에 저장되어 있지 않고 복수개의 서버들 가운데 어느 하나의 서버에 위치하여 있다는 것이다.

그러면, 서버(400)는 요청된 파일을 상기 이동단말기(300)로 전송하고, 이를 수신한 이동단말기(300)는 상기 파일로 해당 서비스 프로그램을 수행한다(S505-S506).

한편, 이동단말기(300)는 상기 서비스 프로그램이 종료되면, 대표파일 이외에 서버로부터 전송 받았던 파일들을 삭제함으로써, 상기 이동단말기(300)의 메모리(330) 공간을 효율적으로 이용할 수 있다(S507).

지금까지 본 발명의 바람직한 실시예를 참조하여 상세히 설명하였지만, 당연한 본 발명의 사상 및 범위를 벗어나지 않고 다양한 변형 또는 수정이 가능하다는 것을 알 것이다.

발명의 효과

이상 설명한 바와 같이, 본 발명에 따르면 이동단말기가 서비스 프로그램의 대표파일만을 저장함으로써, 메모리 공간을 실질적으로 확대하는 효과가 있다.

또한, 본 발명에 따르면 메모리 공간이 실질적으로 확대되므로, 매우 큰 용량의 다운로드 서비스도 가능하고, 또한 다운로드 정보 제공 범위의 확대가 가능한 효과가 있다.

(57) 정구의 방법

청구항 1.

서비스 프로그램 파일을 분할하여 복수개의 분할파일을 생성하고, 상기 복수개의 분할파일의 위치정보 및 실행순서가 기록된 대표파일을 생성하는 서버 및

상기 서버로부터 대표파일을 다운로드 받아 해석한 후, 상기 서비스 프로그램 구동시, 상기 분할파일을 각각 다운로드 받아 상기 서비스 프로그램 파일을 구동시키고, 상기 서비스 프로그램 종료시 상기 분할파일을 삭제하는 이동단말기를 포함하는 것을 특징으로 하는 동작 파일집합 시스템.
청구항 2.
제1항에 있어서, 상기 서버는
서비스 프로그램 파일을 소형 기능에 따라 분할함 보수파의 분할파일을 생성하는 분할파일 생성부,
상기 보수파의 분할파일의 위치정보 및 실행순서가 기록된 대표파일을 생성하는 대표파일 생성부 및
상기 보수파의 분할파일 및 대표파일을 저장하는 데이터베이스를 포함하는 것을 특징으로 하는 동적 파일결합 시스템.

청구항 3.
제2항에 있어서, 상기 대표파일 생성부는,
상기 대표파일을 파일 링크 API(Application Programming Interface)로 제공하는 것을 특징으로 하는 동적 파일결합 시스템.

청구항 4.
제1항 또는 제2항에 있어서, 상기 이동단말기는,
다운로드된 상기 대표파일을 해석하는 대표파일 해석부 및
상기 대표파일 해석부에서 해석된 상기 프로그램 구동 순서에 따라 상기 분할파일을 각각 다운로드 받아 상기 서비스 프로그램 파일을 구동 시키고, 상기 서비스 프로그램 종료시 상기 분할파일을 삭제하는 제어부를 포함하는 것을 특징으로 하는 동적 파일결합 시스템.

청구항 5.
서비스 프로그램 파일이 분할되어 보수파의 서버에 저장되고, 상기 분할파일들의 위치정보 및 실행순서가 기록된 대표파일 상기 보수파의 서버들 중 어느 하나의 서버에 저장된 동적파일결합시스템에 있어서,
상기 대표파일을 다운로드 받아 상기 대표파일을 해석한 후, 상기 서비스 프로그램 구동시, 상기 분할파일을 해당 서버로부터 각각 다운로드 받아 상기 서비스 프로그램 파일을 구동 시키고, 상기 서비스 프로그램 종료시 상기 저장된 분할파일을 삭제하는 이동단말기를 포함하는 것을 특징으로 하는 동적 파일결합 시스템.

청구항 6.
제5항에 있어서, 상기 이동단말기는,
다운로드된 상기 대표파일을 해석하는 대표파일 해석부 및
상기 대표파일 해석부에서 해석된 상기 프로그램 구동 순서에 따라 상기 분할파일을 상기 보수파의 서버로부터 각각 다운로드 받아 상기 서비스 프로그램 파일을 구동 시키고, 상기 서비스 프로그램 종료시 상기 분할파일을 삭제하는 제어부를 포함하는 것을 특징으로 하는 동적 파일결합 시스템.
청구항 7.
서비스 프로그램 파일을 분할하여 복수개의 분할파일을 생성하고, 상기 분할파일들의 위치정보 및 실행순서가 기록된 대표파일을 생성하는 서버를 포함하는 동적파일결합시스템의 파일 다운로드 방법에 있어서,
(a) 상기 대표파일을 다운로드 받는 단계;
(b) 상기 다운로드된 대표파일을 해석하는 단계; 및
(c) 상기 서비스 프로그램 구동시, 상기 분할파일을 각각 다운로드 받아 상기 서비스 프로그램 파일을 구동 시키는 단계를 포함하는 것을 특징으로 하는 동적파일 결합시스템의 파일 다운로드 방법.

청구항 8.
제7항에 있어서,
(d) 상기 서비스 프로그램 종료시 상기 분할파일을 삭제하는 단계를 더 포함하는 것을 특징으로 하는 동적 파일결합 시스템의 파일 다운로드 방법.

청구항 9.
제7항 또는 제8항에 있어서, 상기 (c) 단계는,
(c-1) 상기 서비스 프로그램 구동을 입력 받는 단계;
(c-2) 상기 대표파일에 기록된 동작순서에 따라 상기 서버로부터 분할파일을 다운로드 받는 단계; 및
(c-3) 상기 분할 파일을 실행하는 단계를 포함하는 것을 특징으로 하는 동적 파일결합 시스템의 파일 다운로드 방법.

청구항 10.
제7항 또는 제8항에 있어서, 상기 대표파일은, 파일 맵크 API(Application Programming Interface)로 제공하는 것을 특징으로 하는 동적 파일결합 시스템의 파일 다운로드 방법.

청구항 11.
서비스 프로그램 파일이 분할되어 복수개의 서버에 저장되고, 상기 분할파일들의 위치정보 및 실행순서가 기록된 대표파일이 상기 복수개의 서버들 중 어느 하나의 서버에 저장된 동적파일 결합시스템의 파일 다운로드 방법에 있어서,
(a) 상기 대표파일을 다운로드 받는 단계;
(b) 상기 대표파일을 해석하는 단계; 및
(c) 상기 서비스 프로그램 구동시, 상기 분할파일을 해당 서버로부터 각각 다운로드 받아 상기 서비스 프로그램 파일을 구동 시키는 단계를 포함하는 것을 특징으로 하는 동적 파일결합 시스템의 파일 다운로드 방법.

청구항 12.
제11항에 있어서.

(d) 상기 서비스 프로그램 종료시 상기 분할파일을 삭제하는 단계를 더 포함하는 것을 특징으로 하는 동적 파일결합 시스템의 파일 다운로드 방법.

청구항 13.

제11항 또는 제12항에 있어서, 상기 (c) 단계는.

(c-1) 상기 서비스 프로그램 구성을 입력 받는 단계;

(c-2) 상기 대표파일에 기록된 동작순서에 따라 상기 복수개의 서버들 중 어느 하나의 서버로부터 분할파일을 다운로드 받는 단계;

(c-3) 상기 분할 파일을 실행하는 단계를 포함하는 것을 특징으로 하는 동적 파일결합 시스템의 파일 다운로드 방법.

청구항 14.

제11항 또는 제12항에 있어서, 상기 대표파일은, 파일 링크 API(Application Programming Interface)로 제공하는 것을 특징으로 하는 동적 파일결합 시스템의 파일 다운로드 방법.

도면

도면 1
도면4

실행 파일

Test.exe FILE LINK DLL FILE LINK OCX
KOREAN PATENT ABSTRACTS

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(54) METHOD FOR STORING MOBILE COMMERCE APPLICATION TO TERMINAL MEMORY BY DIVIDING CODE OF MOBILE COMMERCE APPLICATION INTO EACH FILE ATTRIBUTE

(57) Abstract:

PURPOSE: A method for storing a mobile commerce application to a terminal memory by dividing a code of mobile commerce application into each file attribute is provided to reduce an application download cost and time by downloading only the execution file in case that a customer initially executes a mobile terminal or upgrades software, as a part, like a library file, of a very small modification probability is basically loaded to the mobile terminal by developing the application as one execution file and multiple library files. CONSTITUTION: An execution module download or upgrade request is received from the mobile terminal loading a library module among the mobile commerce application divided into an execution module and the library module to a code area of the terminal memory. The execution module matched with the library module is searched by the request. The searched execution module is transmitted to the mobile terminal. The mobile terminal loads the execution module to an EFS(Embedded File System) of the terminal memory.

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심사관 : 최봉묵

(54) 모바일 상거래 어플리케이션의 단말 메모리 분할 탐색 방법

요약
본 발명은 모바일 상거래 어플리케이션의 단말 메모리 분할 탐색 방법에 관한 것으로, 보다 상세하게는 모바일 전자상거래 응용프로그램을 개발하고 단말기에 적용(탑재)할 때 이동 단말기의 구분된 메모리 영역에 개발된 코드(이진 형태의 복수 개의 파일)들 파일별 특성에 따라 분할하여 탐색하는 방법에 관한 것이다. 본 발명의 특성에 따르면, 모바일 상거래 어플리케이션의 단말 메모리 탐색 방법에 있어서, 실행 모듈과 Lib 모듈로 분할된 모바일 상거래 어플리케이션 중 Lib 모듈을 상기 단말 메모리의 코드 영역에 탐색한 단말기로부터 실행 모듈 다운로드 요청 및 실행 모듈 업그레이드 요청 중 어느
하나를 수신하는 단계와, 상기 요청에 따라 상기 lib 모듈에 상응하는 실행 모듈을 검색하는 단계 및 상기 검색된 실행 모듈을 상기 단말기에 전송하는 단계를 포함한다. 상기 단말기는 상기 실행 모듈을 상기 단말 메모리의 EFS(Embedded File System) 영역에 탑재하는 모바일 상거래 어플리케이션의 단말 메모리 분할 단개 방법이 제공된다.

내표도

도 2

설인어

상거래, 소프트웨어, 분할, 모바일, 메모리

명세서

도면의 간단한 설명

도 1은 종래 이동 단말기의 메모리 상에서의 소프트웨어 구성을 도시한 도면.

도 2는 본 방법에 따른 이동 단말기의 메모리 상에서의 소프트웨어 구성을 도시한 도면.

발명의 상세한 설명

발명의 목적

발명이 속하는 기술 및 그 분야의 총해기술

본 발명은 모바일 상거래 어플리케이션의 단말 메모리 분할 탑재 방법에 관한 것으로, 보다 상세하게는 모바일 전자상거래 어플리케이션을 개발하고 단말기에 적용(탑재)할 때 이동 단말기에 구분된 메모리 영역에 개발된 코드(이진 형태의 복수 개의 파일)를 파일별 특성에 따라 분할하여 탑재할 수 있게 한 모바일 상거래 어플리케이션의 단말 메모리 분할 탑재 방법에 관한 것이다.

기존의 이동 단말기에 적용이 되는 모바일 전자상거래 응용프로그램(Mobile Commerce Application, 예를 들어 맵핑, 중권 등)은 하나의 파일 형태로 이동 단말기에 기본 탑재가 되거나(이동전화기 제품 출하시 코드 영역 혹은 EFS(Embedded File System) 영역에 기본 탑재 또는 무선인터넷의 다운로드 서버를 통해 EFS 영역으로 다운로드 받아서 실행하여 서비스를 이용할 수 있는 구조로 해당 금융 어플리케이션을 메모리에 탑재(적용)하였다.

이 방법의 문제점은 이동 단말기에 기본 탑재할 경우는 해당 어플리케이션을 탑재하기 위해서 제조 공정상에 이 과정이 반드시 추가되어야 하므로 생산성이 떨어지게 되어 단말기 제조사들이 본 방법을 선호하지 않는다.

또한, 다운로드 서버를 통해 EFS영역으로 다운로드 받는 경우, 향후 해당 어플리케이션이 업그레이드되면 고객이 새로운 버전을 다운로드 해야 하는데 하나의 파일로 구성된 소프트웨어 파일 사이즈가 커서 고객이 많은 비용을 부담해야 하고 (패킷 과목) 다운로드 시간도 오래 걸려 고객에게 큰 불편을 초래하므로 이 방법은 이동통신사가 거리게 되지만 이동통신사에게는 불가피한 방법이다.

실제로 대부분의 이동통신사가 채택(제조사에 요구)하는 방법은 기본탐재(EFS)로 출하한 후 S/W 업그레이드 기능을 통해 다시 EFS로 업그레이드된 버전을 교체하는 방법으로 운영하고 있다.

여기서 기본 탐재서에 코드 영역으로 기본탐재 시절 경우에는 제조 공정상에 별도의 영역이 추가되지 않으므로 제조사에서 특별히 이 방법을 거절 이유는 없으나 이 방법은 결국은 S/W 업그레이드를 통해 공급적으로 EFS 영역으로 새 버전을 다운로드 받는 과정은 동일하므로 이동통신사에게는 위에서 서술한 대로 동일한 문제점은 가지게 된다.

발명이 이루고자 하는 기술적 과제
본 발명은 상기와 같은 증례 기술의 문제점을 해결하기 위해 창안된 것으로, 두개의 파일 혹은 그 이상의 파일, 바람직하게는 한 개의 실행 파일과 복수개의 Lib(Library) 파일로 Mobile Commerce Application을 개발하여 Lib 파일과 같이 변경가능성이 아주 작은 것은 이동 단말기에 기술 탐재시험이, 코드 영역에 넣어서 제조사의 추가 공정의 부담을 줄이고, 고객이 이동 단말기를 개통한 후 초기 실행시나 소프트웨어 업그레이드의 경우에는 실행파일만을 다운로드하여 해당 어플리케이션 다운로드 비용을 줄이고 다운로드 시간을 줄이는 시간을 줄일 수 있게 한 모바일 상거래 어플리케이션의 단말 매모리 분할 탐재 방법을 제공하는데 그 목적이 있다.

발명의 구성 및 작동

상기와 같은 목적을 달성하기 위한 본 발명은 모바일 상거래 어플리케이션의 단말 매모리 탐재 방법에 있어서, 실행 모듈과 Lib 모듈로 분할된 모바일 상거래 어플리케이션 중 Lib 모듈은 상기 단말 매모리의 코드 영역에 탐재한 단말기로부터 실행 모듈 다운로드 요청 및 실행 모듈 업그레이드 요청 수신하는 단계, 상기 요청에 따라 상기 Lib 모듈에 양분할 실행 모듈을 검색하는 단계 및 상기 검색된 실행 모듈을 상기 단말기로 전송하는 단계를 포함하는데, 상기 단말기로 전송된 실행 모듈은 상기 단말 매모리의 EFS(Embedded File System) 영역에 탐재하는 것을 특징으로 한다.

본 발명에서 상기 실행 모듈 다운로드 요청은 상기 단말기의 초기 실행시에 생성되어 전송되는 것을 특징으로 한다.

본 발명에서 상기 모바일 상거래 어플리케이션은 적어도 하나의 실행 모듈과 적어도 하나 이상의 Lib (Library) 모듈로 구성되며 코드 영역과 EFS 영역으로 분할된 이동단말기 매모리로 탐재된 것을 특징으로 한다.

본 발명에서 상기 Lib 모듈들은 상기 이동 단말기 제조시 단말기 매모리의 코드 영역에 탐재된 것을 특징으로 한다.

본 발명에서 상기 실행 모듈은 이동 단말기 최초 실행시 서비스 서버로부터 다운로드 받아 EFS 영역에 탐재된 것을 특징으로 한다.

본 발명에서 상기 서비스 서버는 이동 단말기로의 요청에 따라 동신망을 통해 상기 이동 단말기로 실행모듈을 전송하는 것을 특징으로 한다.

본 발명에서 상기 실행 모듈은 서비스 서버로부터 다운로드 받아 교체 가능한 것을 특징으로 한다.

이와 같이, 본 발명은 두개의 파일 혹은 그 이상의 파일, 바람직하게는 한 개의 실행 파일과 복수개의 Lib (Library) 파일로 Mobile Commerce Application을 개발하여 Lib 파일과 같이 변경가능성이 아주 작은 것은 이동 단말기에 기존 탐재시험이, 코드 영역에 넣어서 제조사의 추가 공정의 부담을 줄이고, 고객이 이동 단말기를 개통한 후 초기 실행시나 소프트웨어 업그레이드의 경우에는 실행파일만을 다운로드하여 해당 어플리케이션 다운로드 비용을 줄이고 다운로드 시간을 줄일 수 있게 하기 위한 것이다.

이하, 본 발명의 바람직한 실시예를 첨부한 도면들을 참조하여 상세히 설명한다.

도 1은 종래 이동 단말기의 매모리 상에서의 소프트웨어 구성을 도시한 것으로, 도 2는 본 발명에 따른 이동 단말기의 매모리 상에서의 소프트웨어 구성을 도시한 것이다.

도 1을 참조하면, 이동 단말기에 탐재된 소프트웨어는 이동 단말기의 물리적 구성 요소들 을 관리하는 RTOS(Real-Time Operating System)과, RTOS 상에서 구동하며 고유 시스템을 구동하는 고유 시스템 소프트웨어와, 고유 시스템 상에서 구동하며 각종 소프트웨어의 작동을 가능하게 하는 플랫폼과, 플랫폼 상에서 구동하며 최상위 어플리케이션과 플랫폼 간의 인터페이스로 동작하는 표준 API(Application Program Interface) 및 최상위 어플리케이션과 특정 장치간의 인터페이스로 동작하는 특정 API로 구성된다.

소프트웨어 구조에서 최상위에 위치하는 어플리케이션은 이동 단말기에 탐재되어 사용자들이 직접 사용하는 각종 유저 프로그램이며, 대표적으로 소싱, 게임 등이 있다. 어플리케이션은 이동 단말기 제조사로부터 탐재된 고유 어플리케이션과 사용자가 엄의로 탐재한 어플리케이션으로 구분될 수 있다.
바람직하게는 최상위 어플리케이션은 필요에 의해 추가/삭제가 가능하여야 하므로, 이동 단말기의 메모리 중 EFS 영역에 위치한다. 아울러, 이동 단말기의 시스템을 관리하는 API 이하 계층에 정착하는 소프트웨어는 변동 가능성이 거의 없으며, 안정적인 환경이 요구되므로, 이동 단말기의 메모리 중 코드 영역에 위치한다.

도 1에서 살펴보면, 현재 모바일 상거래 어플리케이션은 다운로드 시간 및 비용상 문제가 있을에도 불구하고 EFS 영역에 저장되어 있음을 알 수 있다. 따라서, 사용자는 모바일 상거래 어플리케이션을 이용하기 위해서는 상당 시간과 비용을 두려워해야 했다.

도 2를 참고하면, API 이하 계층은 도 1에 도시된 소프트웨어 계층과 동일하며, 모바일 상거래 어플리케이션의 일부분이 코드 영역으로 탑재되었음을 알 수 있다. 일반적으로, 이동 단말기 특히 휴대폰에 탑재되는 소프트웨어는 하나의 파일로 구성되는 경향이 있다. 그러나, 하나의 파일로 제작되는 소프트웨어는 필연적으로 사용자가 원하는 기능을 제공하기 위한 모든 정보를 포함하고 있어야 하므로 파일 크기가 커질 수밖에 없었다.

따라서, 모바일 상거래 어플리케이션 하나의 파일로 구성될 경우 파일의 크기가 매우 크며 이로 인해 다운로드 시간과 비용이 많이 소요되므로, 본 발명에서는 모바일 상거래 어플리케이션 제작시에 추후 변경 확률이 작은 부분과 변경 확률이 높은 부분으로 분리하여 제작한다.

즉, 실제 구동하는 실행 모듈과 실행 모듈의 구동에 필요한 정보 중 변경 가능성이 거의 없는 부분은 Lib 모듈로 분리하여 이중 Lib 모듈은 이동 단말기 생산시 코드 영역에 탑재함으로써, 단말기 제조사는 추가적으로 모바일 상거래 어플리케이션을 EFS 영역에 탑재하지 않아도 된다.

코드 영역에 Lib 모듈란이 탑재된 이동 단말기는 최초 실행시(예를 들어, 이동 통신사에 신규 동록시 또는 사용자에 의해 모바일 상거래 메뉴 선택시) 이동 통신사의 파일 다운로드 서버에 접속하여 탑재된 Lib 모듈에 상응하는 실행 모듈을 통신 망을 통해 다운로드 받는다. 다운로드 받은 실행 모듈은 추후 업그레이드 등을 통해 변경된 가능성이 높으므로 이동 단말 기의 EFS 영역에 탑재하는 것이 바람직하다.

탑재된 실행 모듈은 이동 단말기의 시스템 관리 소프트웨어에 등록되며, 이후 사용자의 필요에 따라 구동되어 모바일 상거래 기능을 수행한다. 아래 표는 본 발명의 내용을 앞서 설명한 종래 기술과 비교하여 정리한 것이다.
[표 1]

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발병의 효과

상술한 바와 같이, 본 발병은 두개의 파일 혹은 그 이상의 파일. 마찬가지로는 한 개의 실행 파일과 복수개의 Lib(Library) 파일로 Mobile Commerce Application을 개발하여 Lib 파일과 같이 변경가능성이 아주 작은 것은 이동 단말기의 기본 탐색기제, 코드 영역에 넣어서 제조사의 추가 공정의 부담을 줄이고, 고객이 이동 단말기를 개통한 후 초기 설정시나 소프트웨어 업그레이드의 경우에는 실행파일만을 당온로드하여 해당 어플리케이션 당온로드 비용을 줄이고 당온로드 시 걸리는 시간을 줄일 수 있게 하는 이점이 있다.

또한, 본 발병은 당말기 제조사의 단말기 당 생산 시간을 줄일 수 있어 생산성이 향상되며, 이동통신사의 경우에는 당온로드 시간 및 비용을 획기적으로 줄임으로써 컨텐츠 (Mobile Commerce Application)를 사용하는 기업의 만족도를 높일 수 있는 이점이 있다.

(57) 정구의 범위

정구항 1.

모바일 상거래 어플리케이션의 단말 메모리 탭재 방법에 있어서.

실행 모듈과 Lib 모듈로 분할된 모바일 상거래 어플리케이션 중 Lib 모듈을 삽각 단말 메모리의 코드 영역에 탑재한 단말 기로부터 실행 모듈 당온로드 요청 및 실행 모듈 업그레이드 요청 중 어느 하나를 수행하는 단계.

삽각 요청에 따라 삽각 Lib 모듈에 상응하는 실행 모듈을 경색하는 단계 및
상기 검색된 실행 모듈은 상기 단말기로 전송하는 단계를 포함하며.

상기 단말기는 상기 실행 모듈을 상기 단말 메모리의 EFS(Embedded File System) 영역에 탑재하는 것을 특징으로 하는 모바일 상거래 어플리케이션의 단말 메모리 분할 탑재 방법.

청구항 2.

제 1 항에 있어서.

상기 실행 모듈 다운로드 요청은 상기 단말기의 초기 실행시에 생성되어 전송되는 것을 특징으로 하는 모바일 상거래 어플리케이션의 단말 메모리 분할 탑재 방법.

청구항 3.

제 1 항에 있어서.

상기 모바일 상거래 어플리케이션은 적어도 하나의 실행 모듈과 적어도 하나 이상의 Lib(Library) 모듈로 구성되고 코드 영역과 EFS 영역으로 분할된 이동단말기 메모리로 탑재된 것을 특징으로 하는 모바일 상거래 어플리케이션의 단말 메모리 분할 탑재 방법.

청구항 4.

제 3 항에 있어서.

상기 Lib 모듈은 상기 이동 단말기 제조사 단말기 메모리의 코드 영역에 탑재된 것을 특징으로 하는 모바일 상거래 어플리케이션의 단말 메모리 분할 탑재 방법.

청구항 5.

제 3 항에 있어서.

상기 실행 모듈은 이동 단말기 최초 실행시 서비스 서버로부터 다운로드 받아 EFS 영역에 탑재된 것을 특징으로 하는 모바일 상거래 어플리케이션의 단말 메모리 분할 탑재 방법.

청구항 6.

제 5 항에 있어서.

상기 서비스 서버는 이동 단말기로의 요청에 따라 통신망을 통해 상기 이동 단말기로 실행모듈을 전송하는 것을 특징으로 하는 모바일 상거래 어플리케이션의 단말 메모리 분할 탑재 방법.

청구항 7.

제 3 항에 있어서.
상기 설명 모들은 서비스 서버로부터 다운로드 받아 교체 가능한 것을 특징으로 하는 모바일 상거래 어플리케이션의 단말 메모리 분할 담재 방법.

도면

도면 1

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도면 2

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METHOD OF PROVIDING MOBILE APPLICATION AND COMPUTER-READABLE MEDIUM HAVING THEREON PROGRAM PERFORMING FUNCTION EMBODYING THE SAME

A method of providing a mobile application and a computer-readable medium having thereon a program performing a function embodying the same are disclosed. In accordance with the method of the present invention, a transmission time and a loading time of the mobile application, and a limitation on a number and a size of the mobile application are minimized, and providing the personalized mobile application is possible.
Description

METHOD OF PROVIDING MOBILE APPLICATION AND COMPUTER-READABLE MEDIUM HAVING THEREON PROGRAM PERFORMING FUNCTION EMBODYING THE SAME

Technical Field

[1] The present invention relates to a method of providing a mobile application and a computer-readable medium having thereon a program performing a function embodying the same, and more particularly to a method of providing a mobile application and a computer-readable medium having thereon a program performing a function embodying the same that minimizes a transmission time and a loading time of the mobile application, and a limitation on a number and a size of the mobile application, and is capable of providing the personalized mobile application.

Background Art

[2] As a processing performance of a mobile communication terminal is improved, the mobile communication terminal is capable of executing various applications.

[3] For instance, an application provider creates the application based on an execution environment such as WIP, SKVM and GVM. A user of the mobile communication terminal connects to a mobile communication network to download the application to the mobile communication terminal. The mobile communication terminal executes the application based on the execution environment such as WIP, SKVM and GVM to provide the application to the user.

[4] Hereinafter, the application executable in the mobile communication terminal is referred to as a "mobile application".

[5] Hereinafter, a mobile application providing server refers to a system of a mobile communication provider that transmits the mobile application to the mobile communication terminal through the mobile communication network or a system of a mobile application provider.

[6] Hereinafter, the mobile communication terminal hereinafter refers to a terminal for receiving the mobile application from the mobile application providing server and executing the received mobile application, which provides the execution environment for the mobile application such as WIP, SKVM and GVM.

[7] A conventional method for providing the mobile application has following drawbacks.

[8] Firstly, a limitation due to limited resource of the mobile communication terminal
exists.

Although latest mobile communication terminals has a high performance, a size of the mobile application that may be stored in the mobile communication terminal and a size of the mobile application that may be processed by the mobile communication terminal are limited.

Secondly, a limitation due to a limited bandwidth of the mobile communication network exists.

The bandwidth provided by the mobile communication network is limited. Therefore, the mobile application provider should optimize a configuration of the mobile application such that the user of the mobile communication terminal may receive the mobile application in a short time. That is, the mobile application provider should minimize a screen configuration or an image configuration of the mobile application such that the mobile application is optimized for the bandwidth of the mobile communication network. Therefore, the mobile application provider cannot use various configurations when creating the mobile application.

Accordingly, a provision of the mobile application for processing various functions is suppressed, and only a simple game mobile application having a small size is provided.

Moreover, a time required to load the mobile application in the mobile communication terminal after a selection of the mobile application by the user is excessively long.

That is, since an entirety of the mobile application is received through the mobile communication network and is loaded as a whole, a time required for an execution of the mobile application is excessively long.

**Disclosure of Invention**

**Technical Problem**

It is an object of the present invention to provide a method for providing a mobile application that minimizes a transmission time and a loading time of the mobile application and a limitation on the number and a size of the mobile application, and that is capable of providing a personalized mobile application based on a mobile communication terminal information or a user information.

It is yet another object of the present invention to provide a computer-readable medium having thereon a program performing a function embodying a method for providing the mobile application.

**Technical Solution**

In order to achieve above-described object of the present invention, there is provided a method for providing a mobile application in an mobile application
Providing server for providing the mobile application, the method comprising steps of: (a) dividing the mobile application into a plurality of execution data and storing the plurality of execution data; (b) receiving an application requesting event transmitted from a mobile communication terminal, the mobile communication terminal executing and providing the mobile application; (c) extracting one of the plurality of execution data to be provided to the mobile communication terminal, the extracted execution data corresponding to the application requesting event; and (d) transmitting the extracted execution data to the mobile communication terminal.

Preferably, each of the plurality of the execution data includes at least one of an executable code, a display data and a resource data for a scene of the mobile application.

Preferably, the step (b) comprises: (b-1) receiving the application requesting event including at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data.

Preferably, the step (c) comprises (c-1) extracting one of the plurality of the execution data based on at least one of the device identification information, the user identification information and the identification information of the execution data.

In accordance with the method of the present invention further comprises (e) storing a plurality of control profiles including a plurality of control nodes corresponding to a plurality of scenarios for the application requesting event prior to carrying out the step (b), and the step (c) comprises (c-2) extracting one of the plurality of the execution data based on one of the plurality of control profiles corresponding to the application requesting event.

Preferably, the control node includes an identification information for one of the plurality of the execution data.

Preferably, a first control node included in a first control profile of the plurality of control profiles is associated with one of: the execution data corresponding the first control node; a second control profile of the plurality of control profiles different from the first control profile; and a second control node included in the second control profile different from the first control node.

Preferably, each of the plurality of the control profile or each of the plurality of the control node is represented by an identifier, and the association is represented in a form of a link to the identifier.

There is also provided a method for providing a mobile application in a mobile communication terminal for receiving providing the mobile application, the method comprising steps of: (a) generating an application requesting event corresponding to an initial execution data of the mobile application for executing the mobile application;
(b) transmitting the application requesting event to a mobile application providing server for providing the mobile application; (c) receiving the initial execution data corresponding to the application requesting event from the mobile application providing server and executing the received initial execution data; (d) generating an additional application requesting event for requesting an additional execution data required during the execution of the initial execution data; (e) transmitting the additional application requesting event to the mobile application providing server; and (f) receiving the additional execution data of the mobile application corresponding to the additional application requesting event from the mobile application providing server and executing the received additional execution data.

Preferably, each of the application requesting event and the additional application requesting event includes at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data.

Preferably, the initial execution data includes at least one of an executable code, a display data and a resource data for an initial screen of the mobile application.

Preferably, the additional execution data includes at least one of an executable code, a display data and a resource data for an additional screen to be displayed according to a user input during the execution of the mobile application based on the initial execution data.

**Advantageous Effects**

As described above, the method for providing the mobile application in accordance with the present invention is advantageous in that the transmission time and the loading time of the mobile application and the limitation on the number and the size of the mobile application are minimized, and the personalized mobile application may be provided based on the mobile communication terminal information or the user information.

**Brief Description of the Drawings**

Fig. 1 is a flow diagram exemplifying a method for providing a mobile application in accordance with the present invention.

Fig. 2 is a flow diagram exemplifying another method for providing a mobile application in accordance with the present invention.

Fig. 3 is a diagram illustrating a concept of providing a mobile application between a mobile application providing server and a mobile communication terminal in accordance with a method for providing a mobile application of the present invention.

Fig. 4 is a diagram illustrating a concept of a control profile in accordance with a method for providing a mobile application of the present invention.
Best Mode for Carrying Out the Invention

A method for providing a mobile application and a computer-readable medium having thereon a program performing a function embodying the same in accordance with the present invention will now be described in detail with reference to the accompanied drawings.

Fig. 1 is a flow diagram exemplifying a method for providing a mobile application in accordance with the present invention wherein the method is embodied in a mobile application providing server.

Referring to Fig. 1, the mobile application providing server divides the mobile application into a plurality of execution data and stores the plurality of execution data (S110).

Each of the plurality of the execution data may include an executable code, a display data or a resource data for each scene of the mobile application.

The executable code is an independently executable code to correspond to the scene. That is, the executable code is independently executable for each scene contrary to that of the conventional art that is executable for the entirety of the mobile application. Therefore, the executable code is required for each scene of the mobile application.

The display data is an element displayed on a screen when a mobile application is executed wherein a plurality of scenes corresponding to a user input are divided and stored according to the user input for each scene.

The resource data refers to a data that may be additionally displayed such as a control box, a text box and an image other than the display data.

In accordance with the conventional art, the executable code, the display data and the resource data are integrated into the mobile application. Therefore, the entirety of the mobile application transmitted from the mobile application providing server to the mobile communication terminal. However, in accordance with the present invention, the mobile application is stored by dividing into the display data or the resource data, the executable code for executing the display data or the resource data instead of being stored as a whole.

Since the mobile application is stored as the plurality of the execution data, the transmission and the execution per execution data are possible.

Although not shown, the mobile application providing server may store, in advance,
a control profile for extracting the execution data to correspond to storing the plurality of execution data constituting the mobile application.

[48] The control profile defines a scheme on extracting the plurality of execution data stored in the step S110 to correspond to the application requesting event.

[49] The control profile may include a plurality of control nodes for each mobile application.

[50] For instance, a control profile A is stored for a mobile application A and a control profile B is stored for a mobile application B.

[51] The control profile includes the plurality of control nodes corresponding to the plurality of scenarios for the application requesting event. The execution data to be transmitted is extracted based on the corresponding control node.

[52] In addition, the control profile may be configured based on a user group information in order to provide a personalized service.

[53] For instance, a control profile C may be stored for a user group C and a control profile D may be stored for a user group D.

[54] The control profile based on the user group information may be configured to extract the execution data to be transmitted to the mobile communication terminal, and be used in order to embody the personalized mobile application.

[55] Moreover, the control node includes an identification information of the execution data corresponding to the control node, and is configured to extract the execution data based thereon.

[56] The extraction of the execution data based on the control profile and the control node will be described in latter portion of specification.

[57] In addition, a first control node may be associated with the corresponding execution data in order to extract the execution data to be transmitted to the mobile communication terminal.

[58] Moreover, the first control node included in a first control profile may be associated with a second control profile.

[59] In addition, the first control node included in the first control profile may be associated with a second control node included the second control profile.

[60] The association may be embodied by expressing the control profile or the control node as an identifier and representing the identifier as a link.

[61] A detailed description will be given with reference to Fig. 4. When a configuration wherein a first control node included in a first control profile is associated with a second control profile or a second control node in the second control profile is employed, the limitation of the conventional art may be overcome. Therefore, the limitation on the size and the number of the mobile application executed in the mobile communication terminal is minimized.
Thereafter, the application requesting event is received from the mobile communication terminal that executes and provides the mobile application (S130).

The application requesting event is generated by the mobile communication terminal. The application requesting event is a request for the execution data provided by the mobile application providing server in order to execute the mobile application.

In order to provide the execution data from the mobile application providing server to the mobile communication terminal, an information of a user or the mobile communication terminal is required.

Therefore, the application requesting event may include at least one of a device identification information and a user identification information of the mobile communication terminal.

In addition, the mobile communication terminal may request the execution data for another scene while executing the execution data of the mobile application, i.e., while executing the mobile application based on a scene data. In such case, the mobile application providing server provides the corresponding data to the mobile communication terminal.

In order to achieve this, the application requesting event includes an information on the execution data to be received, i.e. an identification information of the execution data.

Thereafter, the mobile application providing server extracts one of the plurality of execution data, which is to be transmitted to the mobile communication terminal, stored in the step S110 to correspond to the application requesting event received in the step S130 (S150).

For instance, when the application requesting event includes at least one of the device identification information, the user identification information and the identification information of the execution data, the mobile application providing server extracts the execution data to be provided to the mobile communication terminal based on at least one of the informations.

When the control profile is stored, the execution data is extracted based on the control profile.

The extraction of the execution data is described in detail below.

In case that the control profile is stored for each mobile application, the application requesting event includes at least one of the device identification information of the mobile communication terminal, the user identification information of the mobile communication terminal, a user input information and the identification information of the execution data.

Therefore, the mobile application providing server extracts the execution data received in the step S130 by comparing the device identification information, the user
identification information, the user input information or the identification information included in the execution data with the control node included in the control profile based on the mobile application.

[74] The similar may be applied to the control profile classified according to the user group.

[75] Thereafter, the mobile application providing server transmits the execution data extracted in the step S150 to the mobile communication terminal (S170).

[76] While the entirety of the mobile application is transmitted from the mobile application providing server to the mobile communication terminal in accordance with the conventional method, only the execution data extracted is transmitted in accordance with the present invention.

[77] The mobile communication terminal executes and provides the execution data transmitted by the mobile application providing server. Thereafter, when the mobile communication terminal requires an additional execution data, the mobile communication terminal again transmits the application requesting event to the mobile application providing server in the step S130. The mobile communication terminal then receives the corresponding additional execution data and provides the received execution data to the viewer.

[78] Therefore, the disadvantages of the conventional art such as the limitation in the size of the mobile application executable in the mobile communication terminal, the excessive time required to receive and execute the mobile application, and the limitation in the number and the size of the mobile application due to the limited bandwidth or resource may be overcome.

**Mode for the Invention**

[79] Fig. 2 is a flow diagram exemplifying another method for providing the mobile application in accordance with the present invention, wherein the method is embodied in the mobile communication terminal for receiving and providing the execution data from the mobile application providing server.

[80] Referring to Fig. 2, the mobile communication terminal generates the application requesting event for requesting an initial execution data in order to execute the mobile application (S210).

[81] The application requesting event is identical to the application requesting event described with reference to Fig 1.

[82] That is, the application requesting event may include at least one of the device identification information of the mobile communication terminal, the user identification information of the mobile communication terminal, the user input information and the identification information of the execution data.
The mobile application providing server stores the plurality of execution data divided according to the scenes of the mobile application in order to execute the mobile application. The application requesting event is an event for requesting the initial execution data of the plurality of execution data.

The initial execution data may include the executable code, the display data or the resource data for an initial screen of the mobile application, i.e. for a configuration of a screen initially displayed when the mobile application is executed.

Thereafter, the mobile communication terminal transmits the application requesting event generated in the step S210 to the mobile application providing server (S230).

That is, the mobile communication terminal transmits the application requesting event to the mobile application providing server in order to receive the desired initial execution data.

Thereafter, the mobile communication terminal receives and executes the initial execution data corresponding to the application requesting event transmitted from the mobile application providing server (S250).

The initial execution data is extracted by the mobile application providing server based on at least one of the device identification information of the mobile communication terminal, the user identification information of the mobile communication terminal, the user input information and the identification information of the execution data. The initial execution data extracted by the mobile application providing server is then transmitted to the mobile communication terminal. The mobile communication terminal then receives and executes the initial execution data in the step S250.

Contrary to the configuration of the conventional mobile application, the mobile communication terminal receives only the initial execution data instead of the entirety of the mobile application.

Thereafter, the mobile communication terminal generates an additional application requesting event for requesting the additional execution data that is required during the execution the initial execution data in the step S250. (S270)

The additional execution data is the executable code, the display data or the resource data for a screen that is to be additionally displayed to correspond to a user input while executing the mobile application based on the initial execution data in the mobile communication terminal.

While the additional application requesting event is similar to the application requesting event, the additional application requesting event differs from the application requesting event in that the additional execution data is requested instead of the initial execution data.

Thereafter, the mobile communication terminal transmits the additional application requesting event generated in the step S270 to the mobile application providing server
(S280).

That is, the mobile communication terminal transmits the additional application requesting event to the mobile application providing server in order to receive a desired additional execution data.

Thereafter, the mobile communication terminal receives and executes the additional execution data corresponding to the additional application requesting event transmitted from the mobile application providing server (S290).

The additional execution data extracted by the mobile application providing server based on at least one of the device identification information of the mobile communication terminal, the user identification information of the mobile communication terminal, the user input information and a resource identification information. The additional execution data extracted by the mobile application providing server is transmitted to the mobile communication terminal, and the mobile communication terminal receives and executes the additional execution data in the step S290.

The method for providing the mobile application in accordance with the present invention is advantageous over the conventional method in the following aspects.

In accordance with the conventional method, the mobile communication terminal receives the entirety of the mobile application from the mobile application providing server as a whole. In accordance with the present invention, the mobile communication terminal receives only the required execution data from the mobile application providing server.

That is, the mobile communication terminal receives and executes the initial execution data in the step S250 to be provided to the viewer. When the mobile communication terminal requires the additional execution data, the mobile communication terminal generates the application requesting event for the required additional execution data in the step S270. The mobile communication terminal then transmits the application requesting event to the mobile application providing server in the step S280. Thereafter, the mobile communication terminal receives the corresponding additional execution data in the step S290 to be provided to the viewer.

The above-described configuration, that is, executing the initial execution data and the additional execution data for each scene, is referred to as a scene-by-scene loading hereinafter.

The conventional method is disadvantageous in that the size of the mobile application that is executable by the mobile communication terminal is limited, an excessive time is required to receive and execute the mobile application, and the number and the size of the mobile application is limited due to the limited bandwidth or the limited resource. However, in accordance with the present invention, the disadvantages are overcome by the scene-by-scene loading.
Fig. 3 is a diagram illustrating a concept of providing the mobile application between the mobile application providing server and the mobile communication terminal in accordance with the method for providing a mobile application of the present invention.

Referring to Fig. 3, a plurality of data 110a through 110n, a plurality of control profiles 130a through 130m and a model 210 are shown.

The plurality of data 110a through 110n and the plurality of control profiles 130a through 130m are embodied in the mobile application providing server.

The plurality of data 110a through 110n correspond to the execution data including the scene data or a display control data, and include the executable code, the display data or the resource data for the initial screen and the additional screen of the mobile application, i.e. the scene.

The plurality of control profiles 130a through 130m select and provide the plurality of data 110a through 110n according to a request from the model 210.

For instance, the plurality of control profiles 130a through 130m extracts the mobile application or the execution data from the plurality of data 110a through 110n and carried out a control for a screen configuration.

The plurality of control profiles 130a through 130m extracts the mobile application for each channel or the personalized mobile application based on the device identification information or the user identification information. In addition, the configuration of the mobile application for each function is possible. Moreover, each of the plurality of control profiles 130a through 130m is capable of associating with other control profiles.

The model 210 may include a property 213 and a control profile dispatcher 216, and may be embodied in the mobile communication terminal or the mobile application providing server.

The model 210 includes an information such as a predetermined property and a predetermined specification rather than a variable property. That is, the model 210 is a configuration for processing the mobile application. The model 210 may comprise an information of a property 213 of the mobile application or a control profile dispatcher 216.

The property 213 may include an information of the execution of the mobile application. The control profile dispatcher 216 may include an information of a control of the plurality of control profiles 130a through 130m.

Fig. 4 is a diagram exemplifying the concept of the control profile in accordance with the method for providing the mobile application of the present invention.

Referring to Fig. 4, three control profiles 130a through 130c are shown.

Each of the control profiles 130a through 130c comprises a plurality of control
nodes, and each of the control nodes are denoted as a circle.

[115] For instance, let the control profile 130a be assumed as a profile for a mobile application A, the control profile 130b be assumed as a profile for a mobile application B, and the control profile 130c be assumed as a profile for a mobile application C.

[116] In accordance with conventional art, the mobile application is executed independently.

[117] Therefore, the mobile application A is received and executed independently of the mobile application B without the association.

[118] However, in accordance with the present invention, the mobile application is divided into the plurality of execution data according to the scene and the mobile application is associated with each other such that the limitation of the size and the function of the mobile application are minimized.

[119] For instance, a low-ranking control node 135a of the control profile 130a for the mobile application A may be associated with an intermediate-ranking control node 135b of the control profile 130b for the mobile application B.

[120] In such case, while executing the mobile application A, the screen may be changed to a screen corresponding to a certain function of the mobile application B based on the user input.

[121] This is referred to as a scene-to-scene jumping hereinafter.

[122] Therefore, a design of providing the mobile application may be carried out by considering the function of the mobile application.

[123] In addition, an intermediate-ranking control node 135c of the control profile 130c for the mobile application C may be associated with a top-ranking control node 135b of the control profile 130b for the mobile application B in order to enable the scene-to-scene jumping.

[124] On the other hand, the association may be expressed through an identifier.

[125] For instance, the control profile 130a for the channel A may be expressed as "ncfc://AppA" and the control profile 130b for the channel B as "ncfc://AppB".

[126] In addition, the low-ranking control node 135a of the control profile 130a may be expressed as "ncfc://AppA/A/AA", and the intermediate-ranking control node 135b of the control profile 130b as "ncfc://AppB/B".

[127] The identifier is configured to correspond to the execution data, i.e. one of the plurality of data 110a through 110n of Fig. 3.

[128] When an event corresponding to the low-ranking control node 135a occurs, the scene-to-scene jumping to the intermediate-ranking control node 135b of the control profile 130b because the low-ranking control node 135a is associated with the intermediate-ranking control node 135b of the control profile 130b.

[129] In order to achieve this, the low-ranking control node 135a of the control profile
130a may be linked to "ncfc://AppB/B", and the execution data corresponding to the intermediate-ranking control node 135b of the control profile 130b may thus be expressed.

[130] The above-described configuration is useful when a company work process function is embodied using the mobile application.

[131] For instance, a size of the conventional mobile application embodying the company work process function may be excessively large. Therefore, the mobile application may not be executed in the mobile communication terminal.

[132] Moreover, when the mobile application is embodied, for instance, in a form of WAP, the mobile application has a poor user interface.

[133] However, in accordance with the present invention, the company work process function may be embodied using a plurality of the mobile application, and the additional mobile application managing and associating the plurality of the mobile application. Each of the mobile applications may be divided into the plurality of execution data, and be associated to the scene through the control profile. Therefore, the company work process function may be provided by the mobile communication terminal.

[134] In addition, the present invention provides a computer-readable medium having thereon a program performing function embodying the method for providing the mobile application.

[135] The computer-readable medium refers to various storage mediums for storing a data in a code or a program format that may be read by a computer system. The computer-readable medium may include a memory such as a ROM and a RAM, a storage medium such as CD-ROM and a DVD-ROM, a magnetic storage medium such as a magnetic tape and a floppy disk, and an optical data storage medium. The computer-readable medium may include a data transferred via the Internet. The computer-readable medium may be embodied by a computer-readable data divided and stored over computer systems connected through a network.

[136] Since the computer-readable medium in accordance with the present invention is substantially identical to that of the method in accordance with the present invention described with reference to Figs. 1 through 4, a detailed description thereof is omitted.

[137] While the present invention has been particularly shown and described with reference to the preferred embodiment thereof, it will be understood by those skilled in the art that various changes in form and details may be effected therein without departing from the spirit and scope of the invention as defined by the appended claims.

**Industrial Applicability**

[138] In addition, the transmission time and the loading time of the mobile application
and the limitation on the number and a size of the mobile application are minimized in accordance with the method for providing the mobile application, and the personalized mobile application may be provided.

[139] That is, the mobile application providing server stores the mobile application into the execution data corresponding to the control profile, and extracts and provides the execution data required for the execution of the mobile application based on the control profile according to the request of the mobile communication terminal. Therefore, the mobile communication terminal may carry out the scene-by-scene loading of the mobile application to minimize the time required for receiving and loading of the mobile application.

[140] In addition, the mobile application providing server stores the mobile application into the execution data based on the plurality of control profile, and extracts the execution data corresponding to the second control profile through the scene-to-scene jumping according to the request of the mobile communication terminal and provides the extracted execution data to the mobile communication terminal. Therefore, the mobile communication terminal may provide the mobile application including the various functions through the scene-by-scene loading and the scene-to-scene jumping.

[141] Moreover, the mobile communication terminal may minimize the transmission time and the loading time of the mobile application, and the limitation on the number and the size of the mobile application through the scene-by-scene loading and the scene-to-scene jumping.

[142] In addition, the execution data of the mobile application to be provided to the mobile communication terminal may be selected based on the device identification information and the user identification information of the mobile communication terminal to provide the personalized mobile application.
Claims

[1] A method for providing a mobile application in an mobile application providing server for providing the mobile application, the method comprising steps of:
(a) dividing the mobile application into a plurality of execution data and storing the plurality of execution data;
(b) receiving an application requesting event transmitted from a mobile communication terminal, the mobile communication terminal executing and providing the mobile application;
(c) extracting one of the plurality of execution data to be provided to the mobile communication terminal, the extracted execution data corresponding to the application requesting event; and
(d) transmitting the extracted execution data to the mobile communication terminal.

[2] The method in accordance with claim 1, wherein each of the plurality of the execution data includes at least one of an executable code, a display data and a resource data for a scene of the mobile application.

[3] The method in accordance with claim 1, wherein the step (b) comprises:
(b-1) receiving the application requesting event including at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data.

[4] The method in accordance with claim 3, wherein the step (c) comprises (c-1) extracting one of the plurality of the execution data based on at least one of the device identification information, the user identification information and the identification information of the execution data.

[5] The method in accordance with claim 1, further comprising (e) storing a plurality of control profiles including a plurality of control nodes corresponding to a plurality of scenarios for the application requesting event prior to carrying out the step (b), and
the step (c) comprises (c-2) extracting one of the plurality of the execution data based on one of the plurality of control profiles corresponding to the application requesting event.

[6] The method in accordance with claim 5, wherein the control node includes an identification information for one of the plurality of the execution data.

[7] The method in accordance with claim 5, wherein a first control node included in a first control profile of the plurality of control profiles is associated with one of: the execution data corresponding the first control node; a second control profile
of the plurality of control profiles different from the first control profile; and a second control node included in the second control profile different from the first control node.

[8] The method in accordance with claim 7, wherein each of the plurality of the control profile or each of the plurality of the control node is represented by an identifier, and the association is represented in a form of a link to the identifier.

[9] A method for providing a mobile application in a mobile communication terminal for receiving providing the mobile application, the method comprising steps of:
(a) generating an application requesting event corresponding to an initial execution data of the mobile application for executing the mobile application;
(b) transmitting the application requesting event to a mobile application providing server for providing the mobile application;
(c) receiving the initial execution data corresponding to the application requesting event from the mobile application providing server and executing the received initial execution data;
(d) generating an additional application requesting event for requesting an additional execution data required during the execution of the initial execution data;
(e) transmitting the additional application requesting event to the mobile application providing server; and
(f) receiving the additional execution data of the mobile application corresponding to the additional application requesting event from the mobile application providing server and executing the received additional execution data.

[10] The method in accordance with claim 9, wherein each of the application requesting event and the additional application requesting event includes at least one of a device identification information of the mobile communication terminal, a user identification information of the mobile communication terminal and an identification information of the execution data.

[11] The method in accordance with claim 9, wherein the initial execution data includes at least one of an executable code, a display data and a resource data for an initial screen of the mobile application.

[12] The method in accordance with claim 9, wherein the additional execution data includes at least one of an executable code, a display data and a resource data for an additional screen to be displayed according to a user input during the execution of the mobile application based on the initial execution data.

[13] A computer-readable medium having thereon a program performing a function embodying a method for providing a mobile application in accordance with one
of claims 1 through 12.
START

DIVIDE AND STORE MOBILE APPLICATION INTO PLURALITY OF EXECUTION DATA

RECEIVE APPLICATION REQUESTING EVENT FROM MOBILE COMMUNICATION TERMINAL

EXTRACT EXECUTION DATA TO BE TRANSMITTED TO MOBILE COMMUNICATION TERMINAL

TRANSMIT EXTRACTED EXECUTION DATA TO MOBILE COMMUNICATION TERMINAL

END

[Fig. 1]
START

GENERATE APPLICATION REQUESTING EVENT FOR INITIAL EXECUTION DATA ~ S210

TRANSMIT APPLICATION REQUESTING EVENT TO APPLICATION PROVIDING SERVER ~ S230

RECEIVE AND EXECUTE INITIAL EXECUTION DATA FROM APPLICATION PROVIDING SERVER ~ S250

GENERATE ADDITIONAL APPLICATION REQUESTING EVENT FOR ADDITIONAL EXECUTION DATA ~ S270

TRANSMIT ADDITIONAL APPLICATION REQUESTING EVENT TO APPLICATION PROVIDING SERVER ~ S250

RECEIVE AND EXECUTE ADDITIONAL EXECUTION DATA FROM APPLICATION PROVIDING SERVER ~ S270

END

[Fig. 3]

110a DATA #1 130a CONTROL PROFILE #1 213 PROPERTY

110b DATA #2 130b CONTROL PROFILE #2

110c . . .

110n DATA #n 130m CONTROL PROFILE #m

216 CONTROL PROFILE DISPATCHER

210
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【발명의 국문명칭】 모바일 애플리케이션 제공 방법 및 이를 실현시키기 위한 프로그램을 기록한 컴퓨터로 판독 가능한 기록 매체
【발명의 영문명칭】 METHOD OF PROVIDING MOBILE APPLICATION AND COMPUTER-READABLE MEDIUM HAVING THEREON PROGRAM PERFORMING FUNCTION EMBODYING THE SAME

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【취지】특허법 제42조의 규정에 의한 출원, 특허법 제60조의 규정에 의한 심사청구를 합니다.

대리인 특허법인 지명 (인)

【수수료】
【기본출원료】 0 면 38,000 원
【가산출원료】 33 면 0 원
【우선권주장료】 0 건 0 원
【심사청구료】 13 항 525,000 원
【합계】 563,000 원
【감면사항】소기업(70%감면)
【감면후 수수료】 168,900 원
【첨부서류】 1. 중소기업기본법 제2조의 규정에 따른 소기업에 해당함을 증명하는 서류_1통
본 발명은 모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에서의 모바일 애플리케이션 제공 방법으로서, (a) 모바일 애플리케이션을 구성하는 다수의 실행 데이터를 구분하여 미리 저장하는 단계와, (b) 상기 모바일 애플리케이션을 실행하여 제공하는 이동통신 단말기로부터 애플리케이션 요청 이벤트를 수신하는 단계와, (c) 상기 애플리케이션 요청 이벤트에 대응하여 상기 다수의 실행 데이터 중에서 상기 이동통신 단말기에 제공할 전송 실행 데이터를 추출하는 단계와, (d) 추출된 전송 실행 데이터를 상기 이동통신 단말기에게로 전송하는 단계를 포함하는 모바일 애플리케이션 제공 방법에 관한 것이다.

본 발명에 따르면, 모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에서 모바일 애플리케이션을 제어 프로파일에 대응되는 실행 데이터 형태로 분할하여 저장하고 이동통신 단말기 측의 요청에 따라서 제어 프로파일을 기초로 모바일 애플리케이션의 실행에 필요한 실행 데이터만을 추출하여 이동통신 단말기 측에서 제공하여 장면 단위 로딩(scene-by-scene loading)이 가능하도록 구성하고, 필요시 다른 제어 프로파일에 대응하는 실행 데이터를 장면-대-장면 점핑(scene-to-scene jumping)을 통하여 추출하여 이동통신 단말기 측에 제공하도록 구성함으로써, 다양한 기능을 포함하는 모바일 애플리케이션을 장면 단위 로딩 및 장면-대-장면 점핑을 통하여 간편하게 구현할 수 있으며, 장면 단위 로딩 및 장면-대-장면 점핑을 통하여 모바일 애플리케이션의 수신 및 실행에 필요한 시간을 최소화하고 제공 가능하다.
한 모바일 애플리케이션의 개수 또는 크기에 대한 제한을 최소화할 수 있으며 이동 통신 단말기 또는 사용자 정보를 기초로 개인화된 모바일 애플리케이션의 제공이 가능하다.

【대표도】

도 1

【색인어】

이동통신, 모바일 애플리케이션, 애플리케이션 요청 이벤트, 실행 테이터, 제어 프로파일, 이동통신 단말기, 애플리케이션 제공 서버, 장면 단위 로딩, 장면-대-장면 점평
【명세서】

【발명의 명칭】

모바일 애플리케이션 제공 방법 및 이를 실행시키기 위한 프로그램을 기록한 컴퓨터로 판독 가능한 기록 매체(METHOD OF PROVIDING MOBILE APPLICATION AND COMPUTER-READABLE MEDIUM HAVING THEREON PROGRAM PERFORMING FUNCTION EMBODYING THE SAME)

【도면의 간단한 설명】

1. 도 1은 본 발명에 따른 모바일 애플리케이션 제공 방법의 예시적인 흐름도.

2. 도 2는 본 발명에 따른 모바일 애플리케이션 제공 방법의 다른 예시적인 흐름도.

3. 도 3은 본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서, 애플리케이션 제공 서버와 이동통신 단말기 사이에서의 모바일 애플리케이션 제공의 개념을 예시적으로 나타내는 도면.

4. 도 4는 본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서 제어 프로파일 개념을 예시적으로 나타내는 도면.

5. <도면의 주요부분에 대한 부호의 설명>

6. 110: 데이터  130: 제어 프로파일

7. 135: 시나리오  210: 모델

8. 213: 속성  216: 제어 프로파일 디스패처

36-6
본 발명은 모바일 애플리케이션 제공 방법 및 이를 실현시키기 위한 프로그램을 기록한 컴퓨터로 관독 가능한 기록 매체에 관한 것으로, 더욱 구체적으로는 모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에서 모바일 애플리케이션을 제어 프로파일에 대응되는 실행 데이터 형태로 분할하여 저장하고 이동통신 단말기 측의 요청에 따라서 제어 프로파일을 기초로 모바일 애플리케이션의 실행에 필요한 실행 데이터만을 추출하여 이동통신 단말기 측에서 제공하여 장면 단위 로딩이 가능하도록 구성하고, 필요시 다른 제어 프로파일에 대응하는 실행 데이터를 장면-대-장면 점명을 통하여 추출하여 이동통신 단말기 측에 제공하도록 구성함으로써, 다양한 기능을 포함하는 모바일 애플리케이션을 장면 단위 로딩 및 장면-대-장면 점명을 통하여 간편하게 구현할 수 있으며, 장면 단위 로딩 및 장면-대-장면 점명을 통하여 모바일 애플리케이션의 수신 및 실행에 필요한 시간을 최소화하고 제공 가능한 모바일 애플리케이션의 개수 또는 크기에 대한 제한을 최소화할 수 있으며 이동통신 단말기 또는 사용자 정보를 기초로 개인화된 모바일 애플리케이션의 제공이 가능한 모바일 애플리케이션 제공 방법 및 이를 실현시키기 위한 프로그램을 기록한 컴퓨터로 관독 가능한 기록 매체에 관한 것이다.

이동통신 단말기의 처리 성능이 증가하면서 이동통신 단말기에서 애플리케이션 실행이 가능하다.
예컨대 WIPI, SKVM, GVM 등의 실행 환경을 기초로 애플리케이션을 제작하고, 이러한 애플리케이션을 이동통신 네트워크 등을 통하여 이동통신 단말기에서 수신하여 저장한 후, WIPI, SKVM, GVM 등의 실행 환경에서 애플리케이션을 실행하게 된다.

이하 이동통신 단말기에서 실행 가능한 애플리케이션을 본원 발명의 명세서에서 "모바일 애플리케이션"이라 지칭한다.

또한 이동통신 단말기는 모바일 애플리케이션 제공 서비로부터 모바일 애플리케이션을 수신하고 이를 실행하기 위한 단말기로서, 예컨대 WIPI, SKVM, GVM 등 모바일 애플리케이션 실행 환경을 포함하고 있다.

또한 모바일 애플리케이션 제공 서비는 이동통신 사업자 측의 시스템 또는 모바일 애플리케이션을 제공하는 사업자 측의 시스템으로서, 모바일 애플리케이션을 이동통신 네트워크를 통하여 이동통신 단말기에에게 전송하기 위한 시스템이다.

그러나 종래의 모바일 애플리케이션의 제공은 다음과 같은 문제점을 가지고 있다.

우선 이동통신 단말기 내의 자원의 한계에 따른 제한점이다.

즉 최근 들어 이동통신 단말기의 사양이 고급화되는 추세이지만 이러한 경우라도 이동통신 단말기 내에서 저장 가능한 혹은 처리 가능한 모바일 애플리케이션의 크기에에는 한계가 있다.

또한 이동통신 네트워크의 대역폭에 따른 제한이다.

이동통신 네트워크에서 제공 가능한 대역폭은 제한적이며 따라서 이동통신
단말기 사용자가 빠른 속도로 모바일 애플리케이션을 수신하기 위해서는 모바일 애플리케이션 구성된 서버가 사용 가능한 네트워크 내에서 전송 가능하도록 제한적으로 화면 구성이나 이미지 구성의 최소화된 수밖에 없으므로 다양한 구성을 사용하지 못하는 단점이 있다.

따라서 이러한 이동통신 단말기의 사양에 따라서 모바일 애플리케이션의 크기가 제한되므로 다양한 기능을 처리하기 위한 모바일 애플리케이션의 보급은 제한되며, 단순히 작은 크기로 구현 가능한 게임 모바일 애플리케이션 등만이 보급되고 있는 상황이다.

또한 모바일 애플리케이션을 선택한 후 실제 모바일 애플리케이션을 로딩하기까지 많은 시간이 소요되는 단점이 있다.

즉 모바일 애플리케이션 전체를 이동통신 네트워크를 통하여 수신하고 이를 전체적으로 실행하기 때문에 실제 모바일 애플리케이션의 실행에까지 많은 시간이 걸리는 단점이 있다.

【발병이 이루고자 하는 기술적 과제】

본 발병의 목적은 모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에서 모바일 애플리케이션을 제어 프로파일에 대응되는 실행 데이터 형태로 분할하여 저장하고 이동통신 단말기에 즉의 요청에 따라서 제어 프로파일을 기초로 모바일 애플리케이션의 실행에 필요한 실행 데이터만을 추출하여 이동통신 단말기 측에서 제공하여 장면 단위 로딩이 가능하도록 구성하고, 필요시 다른 제어 프로파일에 대응하는 실행 데이터를 장면-대장면 점핑을 통하여 추출하여 이동통신 단말기 측에
제공하도록 구성함으로써, 다양한 기능을 포함하는 모바일 애플리케이션을 장면 단위 로딩 및 장면-대-장면 절명을 통하여 간편하게 구현할 수 있으며, 장면 단위 로딩 및 장면-대-장면 절명을 통하여 모바일 애플리케이션의 수신 및 실행에 필요한 시간을 최소화하고 제공 가능한 모바일 애플리케이션의 개수 또는 크기에 대한 제한을 최소화할 수 있으며 이동통신 단말기 또는 사용자 정보를 기초로 개인화된 모바일 애플리케이션의 제공이 가능한 모바일 애플리케이션 제공 방법을 제공하는 데 있다.

본 발명의 다른 목적은 상기 모바일 애플리케이션 제공 방법의 각 단계를 실행시키기 위한 프로그램을 기득한 컴퓨터로 관독 가능한 기록 매체를 제공하는 데 있다.

【발명의 구성】

상기 기술적 과정을 달성하기 위하여, 본 발명은 모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에서의 모바일 애플리케이션 제공 방법으로서, (a) 모바일 애플리케이션을 구성하는 다수의 실행 데이터를 구분하여 미리 저장하는 단계와, (b) 상기 모바일 애플리케이션을 실행하여 제공하는 이동통신 단말기로부터 애플리케이션 요청 이벤트를 수신하는 단계와, (c) 상기 애플리케이션 요청 이벤트에 대응하여 상기 다수의 실행 데이터 중에서 상기 이동통신 단말기에 제공할 전송 실행 데이터를 추출하는 단계와, (d) 추출된 전송 실행 데이터를 상기 이동통신 단말기에게 전송하는 단계를 포함하는 모바일 애플리케이션 제공 방법을 제공한다.

본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서, 상기 다수의 실행
데이터는 상기 모바일 애플리케이션의 장면에 대한 실행 코드, 화면 데이터 또는 리소스 데이터를 포함할 수 있다.

또한 본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서, 상기 단계 (b)는, (b-1) 상기 이동통신 단말기에 대한 장치 식별 정보 또는 상기 이동통신 단
말기의 사용자 식별 정보 또는 상기 실행 데이터의 식별 정보 중 어느 하나 이상을
포함하는 상기 애플리케이션 요청 이벤트를 수신하는 단계를 포함할 수 있다.

또한 본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서, 상기 단계
(c)는, (c-1) 상기 장치 식별 정보 또는 상기 사용자 식별 정보 또는 상기 실행 테이터의 식별 정보를 기초로 상기 전송 실행 데이터를 추출하는 단계를 포함할 수 있다.

또한 본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서, 상기 단계
(b) 이전에, (e) 상기 애플리케이션 요청 이벤트에 대한 다수의 시나리오에 대응한
다수의 제어 노드를 포함하는 다수의 제어 프로파일을 미리 저장하는 단계를 더 포
함하고, 상기 단계 (c)는, (c-2) 상기 다수의 제어 프로파일 중에서 상기 애플리케
이션 요청 이벤트에 적합한 제어 프로파일을 기초로 상기 전송 실행 데이터를 추출
하는 단계를 포함할 수 있다.

또한 본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서, 상기 제어
노드는 상기 다수의 실행 데이터 중에서 대응하는 실행 데이터에 대한 식별 정보를
포함하여 상기 전송 실행 데이터를 추출할 수 있다.

또한 본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서, 상기 제어
노드는 상기 전송 실행 데이터의 주출을 위하여 대응하는 실행 데이터에 연관되거나 다른 제어 프로파일에 연관되거나 다른 제어 프로파일의 다른 제어 노드와 연관될 수 있다.

또한 본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서, 상기 제어 프로파일 또는 상기 제어 노드 각각은 식별자 형태로 표현되고, 상기 연관은 상기 식별자에 대한 링크 형태로 표시될 수 있다.

또한 본 발명은 모바일 애플리케이션을 수신하여 제공하는 이동통신 단말기에서의 모바일 애플리케이션 제공 방법으로서, (a) 모바일 애플리케이션의 실행을 위하여 상기 모바일 애플리케이션의 초기 실행 데이터를 요청하는 애플리케이션 요청 이벤트를 생성하는 단계와, (b) 상기 애플리케이션 요청 이벤트를 상기 모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에게로 전송하는 단계와, (c) 상기 애플리케이션 제공 서버로부터 전송되는 상기 애플리케이션 요청 이벤트에 대응한 상기 모바일 애플리케이션의 상기 초기 실행 데이터를 수신하여 실행하는 단계와, (d) 상기 초기 실행 데이터의 실행 도중에 필요한 추가 실행 데이터를 요청하는 추가 애플리케이션 요청 이벤트를 생성하는 단계와, (e) 상기 추가 애플리케이션 요청 이벤트를 상기 애플리케이션 제공 서버에게 전송하는 단계와, (f) 상기 애플리케이션 제공 서버로부터 전송되는 상기 추가 애플리케이션 요청 이벤트에 대응한 상기 모바일 애플리케이션의 상기 추가 실행 데이터를 수신하여 실행하는 단계를 포함하는 모바일 애플리케이션 제공 방법을 제공한다.

본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서, 상기 애플리케이션을 수신하여 제공하는 이동통신 단말기에서의 모바일 애플리케이션 제공 방법으로서, (a) 모바일 애플리케이션의 실행을 위하여 상기 모바일 애플리케이션의 초기 실행 데이터를 요청하는 애플리케이션 요청 이벤트를 생성하는 단계와, (b) 상기 애플리케이션 요청 이벤트를 상기 모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에게로 전송하는 단계와, (c) 상기 애플리케이션 제공 서버로부터 전송되는 상기 애플리케이션 요청 이벤트에 대응한 상기 모바일 애플리케이션의 상기 초기 실행 데이터를 수신하여 실행하는 단계와, (d) 상기 초기 실행 데이터의 실행 도중에 필요한 추가 실행 데이터를 요청하는 추가 애플리케이션 요청 이벤트를 생성하는 단계와, (e) 상기 추가 애플리케이션 요청 이벤트를 상기 애플리케이션 제공 서버에게 전송하는 단계와, (f) 상기 애플리케이션 제공 서버로부터 전송되는 상기 추가 애플리케이션 요청 이벤트에 대응한 상기 모바일 애플리케이션의 상기 추가 실행 데이터를 수신하여 실행하는 단계를 포함하는 모바일 애플리케이션 제공 방법을 제공한다.
선 요청 이벤트 또는 상기 추가 애플리케이션 요청 이벤트는 이동통신 단말기에 대한 장치 석별 정보 또는 상기 이동통신 단말기의 사용자 석별 정보 또는 사용자 심력 정보 또는 상기 실행 데이터의 석별 정보 중 어느 하나 이상을 포함할 수 있다.

또한 본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서, 상기 초기 실행 데이터는 상기 모바일 애플리케이션의 초기 장면에 대한 실행 코드, 화면 데이터 또는 리소스 데이터일 수 있다.

또한 본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서, 상기 추가 실행 데이터는 상기 초기 실행 데이터를 기초로 한 상기 모바일 애플리케이션의 실행 도중에 사용자 입력에 대응하여 추가적으로 표시하여야 할 장면에 대한 실행 코드, 화면 데이터 또는 리소스 데이터일 수 있다.

또한 본 발명은 전술한 모바일 애플리케이션 제공 방법의 각 단계를 실행시키기 위한 프로그램을 기록한 컴퓨터로 판독 가능한 기록 매체를 제공한다.

이하, 본 발명의 모바일 애플리케이션 제공 방법 및 이를 실행시키기 위한 프로그램을 기록한 컴퓨터로 판독 가능한 기록 매체의 실시예를 첨부한 도면을 참조로 보다 구체적으로 설명한다.

도 1은 본 발명에 따른 모바일 애플리케이션 제공 방법의 예시적인 흐름도이다.

도 1은 이동통신 단말기의 요청에 의해서 모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에서의 본 발명에 따른 모바일 애플리케이션 제공 방법의 예시적인 흐름도를 나타낸다.
우선 애플리케이션 제공 서버에서는 모바일 애플리케이션을 구성하는 다수의 실행 데이터를 구분하여 미리 저장한다(S110).

다수의 실행 데이터는 예컨대 모바일 애플리케이션의 각 장면(scene)에 대한 실행 코드, 화면 데이터 또는 리소스 데이터를 포함할 수 있다.

화면 데이터는 모바일 애플리케이션의 실행에 있어서 화면에 표시되는 요소로서, 다수의 장면이 사용자 입력 등에 대응하여 구별되어 저장될 수 있다.

리소스 데이터는 화면 이외에 예컨대 콘트롤 박스 또는 텍스트 박스, 이미지 등 화면에 추가하여 표시할 수 있는 데이터를 의미한다.

종래의 경우 이러한 화면 데이터와 리소스 데이터 등이 통합적으로 저장되어 하나의 모바일 애플리케이션이 생성되어 저장되고 이러한 모바일 애플리케이션이 전처리로 애플리케이션 제공 서버로부터 이동통신 단말기에게로 전송되나, 본 발명에 따른 모바일 애플리케이션 제공 방법의 경우 모바일 애플리케이션을 전처리적으로 저장하지 않고 화면 데이터 또는 리소스 데이터와 이를 실행시키기 위한 실행 코드 등의 다수의 실행 데이터로 구분하여 저장하는 것을 특징으로 한다.

이러한 저장은 이후 실행 데이터 단위의 전송과 이동통신 단말기에서의 실행 데이터 단위의 실행을 가능하게 한다.

한편 도시되지는 않았지만 이러한 모바일 애플리케이션을 구성하는 다수의 실행 데이터를 구분하여 미리 저장하는 것과 대응하여 실행 데이터의 추출을 위한 제어 프로파일을 미리 저장할 수 있다.

제어 프로파일은 이동통신 단말기 측의 애플리케이션 요청 이벤트에 대응하
여 단계 S110을 통하여 저장된 다수의 실행 데이터를 어떠한 형식으로 추출하는지에 대한 프로파일이다.

제어 프로파일은 예컨대 모바일 애플리케이션 별로 다수 개의 제어 프로파일이 존재할 수 있다.

예컨대 모바일 애플리케이션 A에 대해서 제어 프로파일 A가 저장되고, 모바일 애플리케이션 B에 대해서 제어 프로파일 B가 미리 저장되어 있을 수 있다.

이러한 제어 프로파일은 애플리케이션 요청 이벤트에 대한 다수의 시나리오에 대응한 다수의 제어 노드를 포함하며, 대응되는 제어 노드를 기초로 이동통신 단말기에 전송할 실행 데이터를 추출하도록 구성된다.

또한 제어 프로파일은 특히 개인화 서비스의 제공을 위하여 사용자 그룹에 대한 제어 프로파일 형태로 저장될 수도 있다.

예컨대 사용자 그룹 C에 대해서는 제어 프로파일 C가 저장되고, 사용자 그룹 D에 대해서 제어 프로파일 D가 미리 저장되어 있을 수 있다.

이러한 사용자 그룹을 기초로 한 제어 프로파일 역시 사용자의 업력에 대응한 시나리오에 대응한 제어 노드를 포함하는 제어 프로파일은 기초로 이동통신 단말기에 전송할 실행 데이터를 추출하도록 구성되며, 특히 개인화 모바일 애플리케이션의 구현을 위하여 사용할 수 있다.

제어 노드는 다수의 실행 데이터 중에서 대응하는 실행 데이터에 대한 식별 정보를 포함하며, 이를 기초로 전송 실행 데이터를 추출하도록 구성된다.

이러한 제어 프로파일과 제어 노드를 기초로 하는 전송할 실행 데이터의 추
출은 이후에서 상세히 설명한다.

또한 이러한 제어 노드는 전송 실행 데이터의 추출을 위하여 대응하는 실행 데이터에 연관되거나 다른 제어 프로파일에 연관되거나 다른 제어 프로파일의 다른 제어 노드와 연관될 수 있으며, 이러한 연관은 제어 프로파일 또는 제어 노드 각각을 식별자 형태로 표현하고, 식별자에 대한 링크 형태로 표시하여 구현될 수 있다.

이러한 사항은 도 4를 참조로 상세히 설명하며, 이러한 제어 프로파일의 제어 노드가 다른 제어 프로파일 또는 다른 제어 프로파일 내의 제어 노드에 연관되도록 구성하여 모바일 애플리케이션의 구성에 있어서 중재의 제한점을 개선할 수 있어서, 이동통신 단말기에서 구현 가능한 모바일 애플리케이션의 크기 또는 개수에 대한 제한을 최소화할 수 있다.

이후 모바일 애플리케이션을 실행하여 제공하는 이동통신 단말기로부터 애플리케이션 요청 이벤트를 수신한다(S130).

애플리케이션 요청 이벤트는 이동통신 단말기 측에서 생성된다. 애플리케이션 요청 이벤트는 모바일 애플리케이션의 실행을 위한 실행 데이터를 애플리케이션 제공 서버로부터 제공받기 위한 요청으로서, 이동통신 단말기에 대한 캐치 식별 정보 또는 이동통신 단말기의 사용자 식별 정보 또는 실행 데이터에 대한 식별 정보 중 어느 하나 이상을 포함할 수 있다.

실행 데이터를 애플리케이션 제공 서버에서 이동통신 단말기로 제공하려면 사용자 또는 이동통신 단말기에 대한 정보가 필요하다.

이를 위하여 애플리케이션 요청 이벤트는 이동통신 단말기에 대한 장치 식별
정보 또는 이동통신 단말기의 사용자 식별 정보 중 어느 하나 이상을 포함할 수 있다.

또한 이동통신 단말기 즉에서 모바일 애플리케이션의 실행 데이터, 예컨대 장면 데이터를 기초로 실행이 되다가 추가적으로 다른 장면에 대한 실행 데이터를 요청할 수도 있다. 이 경우 애플리케이션 제공 서버는 해당 실행 데이터를 이동통신 단말기에 제공하여야 한다.

을 위하여 애플리케이션 요청 이벤트는 수신하여야 할 실행 데이터에 대한 정보, 즉 실행 데이터에 대한 식별 정보를 애플리케이션 제공 서버에 알려주도록 구성된다.

이후 단계 S130에서 수신한 애플리케이션 요청 이벤트에 대응하여 단계 S110을 통하여 미리 저장된 다수의 실행 데이터 중에서 이동통신 단말기에 제공할 실행 데이터, 즉 전송 실행 데이터를 추출한다(S150).

예컨대 애플리케이션 요청 이벤트가 장치 식별 정보 또는 사용자 식별 정보 또는 실행 데이터에 대한 식별 정보 중 어느 하나 이상을 포함하는 경우라면 해당 정보들을 기초로 이동통신 단말기에 제공할 전송 실행 데이터를 추출하는 것이다.

예컨대 전송한 제어 프로파일이 저장되어 있는 경우라면, 제어 프로파일을 기초로 전송 실행 데이터의 추출이 수행된다.

이에 대해서 좀 더 상세히 설명하면 다음과 같다.

예컨대 애플리케이션을 기초로 한 제어 프로파일이 저장되어 있는 경우이다.
이 경우 애플리케이션 요청 이벤트는 이동통신 단말기에 대한 장치 식별 정보 또는 이동통신 단말기의 사용자 식별 정보 또는 사용자 입력 정보 또는 실행 데이터에 대한 식별 정보 중 어느 하나 이상을 포함한다.

따라서 단계 S130에서 수신한 애플리케이션 요청 이벤트 내에 포함되는 장치 식별 정보 또는 사용자 식별 정보 또는 사용자 입력 정보 또는 실행 데이터에 대한 식별 정보를 애플리케이션을 기초로 한 제어 프로파일 내의 대응하는 제어 노드와 비교하여 전송 실행 데이터를 추출하게 된다.

마찬가지로 사용자 그룹 별로 구분된 제어 프로파일에 대해서도 동일하게 적용될 수 있다.

이후 단계 S150에서 추출한 전송 실행 데이터를 이동통신 단말기에게로 전송 한다(S170).

즉 종래의 경우 모바일 애플리케이션 전체를 애플리케이션 제공 서버로부터 이동통신 단말기에 전송하지만, 본원 발명의 경우 전송 실행 데이터만을 전송하게 된다.

이동통신 단말기에서는 전송 실행 데이터를 수신하여 이를 실행하여 시청자에게 제공하게 되며, 이동통신 단말기측에서 추가적으로 필요한 데이터가 있는 경우 단계 S130을 통하여 다시 애플리케이션 요청 이벤트를 애플리케이션 제공 서버로 전송하여 해당 실행 데이터를 수신하여 다시 시청자에게 제공이 가능하다.

따라서 종래의 문제점인 이동통신 단말기 측에서 실행 가능한 모바일 애플리케이션의 크기가 제한되고 애플리케이션 제공 서버로부터 모바일 애플리케이션의
수선 및 실행에 과다한 시간이 소요되고 대역폭 또는 자원 제한에 따른 모바일 애플리케이션의 제공 가능 개수 또는 제공 가능 크기가 제한되는 단점을 개선할 수 있다.

도 2는 본 발명에 따른 모바일 애플리케이션 제공 방법의 다른 예시적인 흐름도이다.

도 2는 모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에서 실행 데이터를 수신하여 제공하는 이동통신 단말기에서의 본 발명에 따른 모바일 애플리케이션 제공 방법의 예시적인 흐름도를 나타낸다.

우선 모바일 애플리케이션의 실행을 위하여 상기 모바일 애플리케이션의 초기 실행 데이터를 요청하는 애플리케이션 요청 이벤트를 생성한다(S210).

애플리케이션 요청 이벤트는 전송한 바와 같다.

즉 애플리케이션 요청 이벤트는 이동통신 단말기에 대한 장치 식별 정보 또는 이동통신 단말기의 사용자 식별 정보 또는 사용자 입력 정보 또는 실행 데이터에 대한 식별 정보 중 어느 하나 이상을 포함할 수 있다.

이 경우 애플리케이션 제공 서버는 모바일 애플리케이션의 실행을 위하여 모바일 애플리케이션의 창에 단위로 구분된 실행 데이터를 저장하며, 애플리케이션 요청 이벤트는 이 중에서 초기 실행 데이터를 요청하는 이벤트이다.

초기 실행 데이터는 예전에 모바일 애플리케이션의 초기 창에, 즉 모바일 애플리케이션을 실행할 때 맨 처음에 표시되는 화면 구성에 대한 실행 코드, 화면 데이터 또는 리소스 데이터일 수 있다.
이후 단계 S210에서 생성한 애플리케이션 요청 이벤트를 모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에게 전송한다(S230).

즉 원하는 초기 실행 데이터의 추출 및 수신을 위해서 애플리케이션 요청 이벤트를 애플리케이션 제공 서버에게 전송하는 것이다.

이후 애플리케이션 제공 서버로부터 전송되는 애플리케이션 요청 이벤트에 대한 모바일 애플리케이션의 초기 실행 데이터를 수신하여 실행한다(S250).

이러한 초기 실행 데이터는 애플리케이션 제공 서버에서 이동통신 단말기에 대한 장치 식별 정보 또는 이동통신 단말기의 사용자 식별 정보 또는 사용자 입력 정보 또는 실행 데이터의 식별 정보 중 어느 하나 이상을 기초로 추출되며, 추출된 초기 실행 데이터가 이동통신 단말기에 전송되고, 단계 S250에서 이를 수신하여 실행하는 것이다.

이 경우 종래의 모바일 애플리케이션의 구성과는 달리 모바일 애플리케이션 전체가 아니라 초기 실행 데이터만을 수신하여 실행이 가능하다.

이후 단계 S250을 통하여 초기 실행 데이터의 실행하는 도중에 필요한 추가 실행 데이터를 요청하는 추가 애플리케이션 요청 이벤트를 생성한다(S270).

추가 실행 데이터는 초기 실행 데이터를 기초로 하여 모바일 애플리케이션의 실행하던 도중에 사용자 입력 등에 대응하여 추가적으로 표시하여야 할 화면에 대한 실행 코드, 화면 데이터 또는 리소스 데이터이다.

추가 애플리케이션 요청 이벤트는 전술한 애플리케이션 요청 이벤트와 동일 하지만 초기 실행 데이터가 아닌 추가 실행 데이터를 요청한다는 점에서 차이가 있
다.

이후 단계 S270에서 생성한 추가 애플리케이션 요청 이벤트를 애플리케이션 제공 서버에 전송한다(S280).

즉 원하는 추가 실험 데이터의 추출 및 수신을 위해서 추가 애플리케이션 요청 이벤트를 애플리케이션 제공 서버에게로 전송하는 것이다.

이후 애플리케이션 제공 서버로부터 전송되는 추가 애플리케이션 요청 이벤트에 대한 모바일 애플리케이션의 추가 실험 데이터를 수신하여 실행한다(S290).

이러한 추가 실험 데이터는 애플리케이션 제공 서버에서 이동통신 단말기에 대한 장치 식별 정보 또는 이동통신 단말기의 사용자 식별 정보 또는 사용자 입력 정보 또는 리소스 식별 정보 중 어느 하나 이상을 기초로 추출되며, 추출된 추가 실험 데이터가 이동통신 단말기에게로 전송되고, 단계 S290에서 이를 수신하여 실행하는 것이다.

이와 같은 본 발명에 따른 모바일 애플리케이션 제공 방법은 중래의 구성과 비교하여 다음과 같은 차이점이 있다.

중래의 경우 이동통신 단말기에서는 모바일 애플리케이션 전체를 애플리케이션 제공 서버로부터 수신하지만, 본원 발명의 경우 필요한 실험 데이터만을 애플리케이션 제공 서버로부터 수신하게 된다.

이 경우 이동통신 단말기에서는 단계 S250에서 초기 실험 데이터를 수신하여 이를 실행하여 시청자에게 제공하게 되며, 이동통신 단말기 측에서 추가적으로 필요한 추가 실험 데이터가 있는 경우 해당 추가 실험 데이터에 대해서 단계 S270을
통하여 애플리케이션 요청 이벤트를 생성하고 단계 S280을 통하여 다시 애플리케이션 요청 이벤트를 애플리케이션 제공 서버로 전송하며, 단계 S290을 통하여 해당 추가 실행 테이터를 수신하여 다시 시청자에게 제공이 가능하다.

이러한 구성, 즉 초기 실행 테이터와 추가 실행 테이터로 장면 단위로 실행하는 것을 본원 명세서에서는 "장면 단위 로딩"이라는 용어로 표현한다.

따라서 장면 단위 로딩을 통하여 종래의 문제점인 이동통신 단말기 측에서 실행 가능한 모바일 애플리케이션의 크기가 제한되고 애플리케이션 제공 서버로부터 모바일 애플리케이션의 수신 및 실행에 과다한 시간이 소요되고 대역폭 또는 자원 제한에 따른 모바일 애플리케이션의 제공 가능 개수 또는 제공 가능 크기가 제한되는 단점을 개선할 수 있다.

도 3은 본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서, 애플리케이션 제공 서버와 이동통신 단말기 사이에서의 모바일 애플리케이션 제공의 개념을 예시적으로 나타내는 도면이다.

도시변모의 다수의 테이터(110a 내지 110n)와, 다수의 제어 프로파일(130a 내지 130m)과, 모델(210)이 도시된다.

데이터(110a 내지 110n)와 제어 프로파일(130a 내지 130m)은 애플리케이션 제공 서버 측에서 구현된다.

데이터(110a 내지 110n)는 전술한 장면 데이터 또는 화면 제어 테이터를 포함하는 실행 데이터에 대응하며, 모바일 애플리케이션의 초기 화면이나 추가적인 화면, 즉 장면에 대한 실행 코드, 화면 데이터 또는 리소스 테이터를 포함한다.
제어 프로파일(130a 내지 130m)은 모델(210)로부터의 요청에 의해서 데이터 (110a 내지 110n)를 선택하여 제공하기 위한 구성이다.

예컨대 다수의 데이터(110a 내지 110n) 중에서 모바일 애플리케이션의 추출 이나 실행 데이터의 추출을 수행한다.

제어 프로파일(130a 내지 130m)은 다수 개가 포함되어 예컨대 모바일 애플리 케이션의 채널 별 추출이나, 장치 식별 정보 또는 사용자 식별 정보를 기초로 한 모바일 애플리케이션의 개인화된 추출을 가능하게 한다. 또한 기능별 제어 프로파일의 구성도 가능하다. 또한 전술하였듯이 다른 제어 프로파일과의 연관도 가능하다.

모델(210)은 속성(213) 및 제어 프로파일 디스패치(216)를 포함할 수 있으며, 이동통신 단말기 측에서 또는 애플리케이션 제공 서버 측에서 구현될 수 있다.

모델(210)은 모바일 애플리케이션의 처리를 수행하기 위하여 가변적인 속성 보다는 미리 정해진 속성이나 규격 등의 정보를 포함한다. 즉 모바일 애플리케이션 의 처리를 수행하기 위한 구성이다. 모델(210)은 예컨대 모바일 애플리케이션의 속 성(213) 정보나 제어 프로파일 디스패치(216)를 포함할 수 있다.

속성(213)은 모바일 애플리케이션의 실행을 위한 정보를 포함할 수 있다. 제 어 프로파일 디스패치(216)는 제어 프로파일(130a 내지 130m)의 제어를 위한 정보 를 포함할 수 있다.

도 4는 본 발명에 따른 모바일 애플리케이션 제공 방법에 있어서 제어 프로 파일 개념을 예시적으로 나타내는 도면이다.
도 4에서는 3개의 제어 프로파일(130a 내지 130c)이 예시적으로 도시된다.

각 제어 프로파일(130a 내지 130c) 내에는 다수의 제어 노드가 포함되며, 각 제어 노드는 동그라미로 표시되어 있다.

예컨대 제어 프로파일(130a)이 모바일 애플리케이션 A에 대한 제어 프로파일이고, 제어 프로파일(130b)이 모바일 애플리케이션 B에 대한 제어 프로파일이고, 제어 프로파일(130c)이 모바일 애플리케이션 C에 대한 제어 프로파일인 경우를 가정하자.

종래의 경우 모바일 애플리케이션 각각은 서로 독립적으로 실행된다.

따라서 모바일 애플리케이션 A를 수신하여 실행하고, 모바일 애플리케이션 B를 실행하여 수신하는 등 서로 간의 관련성이 없었다.

그러나 본 발명에 따른 경우 모바일 애플리케이션을 예컨대 장면 단위로 분할하여 실행 데이터 형식으로 실행 가능하도록 구성하며, 또한 모바일 애플리케이션에 대해서 서로 연관성이 있도록 구성함으로써 모바일 애플리케이션의 크기 및 기능에 대한 제한을 최소화할 수 있다.

즉 모바일 애플리케이션 A에 대한 제어 프로파일(130a)의 하위 제어 노드(135a)는 모바일 애플리케이션 B에 대한 제어 프로파일(130b)의 중간 순위 제어 노드(135b)와 연관된다.

이 경우 모바일 애플리케이션 A를 실행하다가 사용자 입력 등을 기초로 모바일 애플리케이션 B에서 실행 가능한 기능으로 전환할 수 있는 것이다.

이러한 경우를 본원 명세서에서는 "장면-대-장면 잡영(scene-to-scene
jumping)"이라고 지칭할 수 있다.

따라서 모바일 애플리케이션의 제공을 위한 설계에 있어서 다른 모바일 애플리케이션의 기능에 대한 연관성까지도 고려하여 설계가 가능하다.

또한 에코네 모바일 애플리케이션 C에 대한 제어 프로파일(130c)의 중간 순위 제어 노드(135d)는 모바일 애플리케이션 B에 대한 제어 프로파일(130b)의 최우선 순위 제어 노드(135c)와 연관되어 장면-대-장면 점핑이 가능하다.

한편 이러한 연관은 식별자를 통하여 표현될 수 있다.

예컨대 제어 프로파일(130a)은 "ncfc://AppA"라고 표현하고, 제어 프로파일(130b)은 "App://ChaB"라고 표현하는 것으로 가정하자.

그리고 제어 프로파일(130a)의 하위 제어 노드(135a)는 "ncfc://AppA/A/AA"라는 표시가 가능하고, 제어 프로파일(130b)의 중간 순위 제어 노드(135b)는 "ncfc://AppB/B"라고 표시가 가능하다고 가정하자.

이러한 식별자는 원칙적으로 실행 데이터, 즉 도 3의 데이터(110a 내지 110n) 중의 어느 하나에 대응하도록 구성된다.

이 경우 제어 프로파일(130a)의 하위 제어 노드(135a)는 제어 프로파일(130b)의 중간 순위 제어 노드(135b)와 연관되므로, 하위 제어 노드(135a)에 대응하는 이벤트가 발생하면 이는 제어 프로파일(130b)의 중간 순위 제어 노드(135b)에게로의 장면-대-장면 점핑이 수행된다.

이러한 사항을 위해서 제어 프로파일(130a)의 하위 제어 노드(135a)에 대해서는 "ncfc://AppB/B"로 링크가 가능하도록 표시될 수 있으며, 따라서 제어 프로파일

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(130b)의 중간 순위 제어 노드(135b)에 대응하는 실행 데이터가 추출될 수 있다.

이러한 구성은 특히 회사 업무 처리 기능을 모바일 애플리케이션으로 구현하는 경우 유용하다.

예컨대 종래의 모바일 애플리케이션의 경우는 회사 업무 처리를 위한 기능을 구현하기 위해서는 모바일 애플리케이션의 크기가 매우 크므로 이동통신 단말기 상에서 실행되지 못할 수 있다.

또한 이러한 것을 예컨대 WAP 형태로 구현하는 경우에는 사용자 인터페이스가 취약한 단점이 있다.

하지만 본 발명에 따르면 예컨대 회사 업무 기능을 다수의 모바일 애플리케이션으로 구현하고, 이러한 다수의 모바일 애플리케이션을 종합 관리하고 서로 연관되도록 구성한 관리 모바일 애플리케이션을 구성하며, 각각의 모바일 애플리케이션은 전술한 실행 데이터로 구분되고 제어 프로파일을 통하여 다른 모바일 애플리케이션의 장면 등을 연관하여 이동통신 단말기 측에서 제공 가능하도록 구성할 수 있다.

또한 본 발명은 전술한 본 발명에 따른 모바일 애플리케이션 제공 방법의 각 단계를 실현시키기 위한 프로그램을 기록한 컴퓨터로 판독 가능한 기록 매체를 제공한다.

컴퓨터로 판독 가능한 기록 매체는 컴퓨터 시스템에 의하여 읽혀질 수 있도록 데이터, 즉 코드 또는 프로그램 형태의 데이터가 저장되는 모든 종류의 기록 장치를 지칭한다. 이러한 컴퓨터로 판독 가능한 기록 매체는 예컨대 ROM, RAM 등의
메모리와, CD-ROM, DVD-ROM 등의 저장 매체, 자기 테이프, 플로피 디스크 등의 자기 저장 매체, 광 데이터 저장 장치 등이며, 예컨대 인터넷을 통한 전송 형태로 구현되는 경우도 포함한다. 또한 이러한 컴퓨터로 관독 가능한 기록 매체는 네트워크로 연결된 컴퓨터 시스템에 분산되어 분산 방식으로 컴퓨터가 관독 가능한 데이터가 저장되고 실행될 수 있다.

그러나 이러한 컴퓨터로 관독 가능한 기록 매체에 대한 상세한 설명은 도 1 내지 도 4를 참조로 설명한 본 발명에 따른 모바일 애플리케이션 제공 방법과 종 복되므로 생략한다.

비록 본 발명의 구성이 구체적으로 설명되었지만 이는 단지 본 발명을 예시적으로 설명한 것에 불과한 것으로, 본 발명이 속하는 기술분야에서 통상의 지식을 가진다면 본 발명의 본질적인 특성에서 벗어나지 않는 범위 내에서 다양한 변형이 가능할 것이다.

따라서 본 명세서에 개시된 실시예들은 본 발명을 한정하기 위한 것이 아니라 설명하기 위한 것이고, 이러한 실시예에 의하여 본 발명의 사상과 범위가 한정되는 것은 아니다. 본 발명의 범위는 아래의 청구범위에 의해 해석되어야 하며, 그와 동등한 범위 내에 있는 모든 기술은 본 발명의 권리범위에 포함되는 것으로 해석되어야 할 것이다.

【발명의 효과】

이상 설명한 바와 같이, 본 발명에 따르면 모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에서 모바일 애플리케이션을 제어 프로파일에 대응되는 실
행 데이터 형태로 분할하여 저장하고 이동통신 단말기 측의 요청에 따라서 제어 프로파일을 기초로 모바일 에플리케이션의 실행에 필요한 실행 데이터만을 추출하여 이동통신 단말기 측에서 제공하여 장면 단위 로딩이 가능하도록 구성하고, 필요시 다른 제어 프로파일에 대응하는 실행 데이터를 장면-대-장면 점핑을 통하여 추출하여 이동통신 단말기 측에 제공하도록 구성함으로써, 다양한 기능을 포함하는 모바일 에플리케이션을 장면 단위 로딩 및 장면-대-장면 점핑을 통하여 간편하게 구현할 수 있으며, 장면 단위 로딩 및 장면-대-장면 점핑을 통하여 모바일 에플리케이션의 수신 및 실행에 필요한 시간을 최소화하고 제공 가능한 모바일 에플리케이션의 개수 또는 크기에 대한 제한을 최소화할 수 있으며 이동통신 단말기 또는 사용자 정보를 기초로 개인화된 모바일 에플리케이션의 제공이 가능하다.
【특허청구범위】

【청구항 1】

모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에서의 모바일 애플리케이션 제공 방법으로서,

(a) 모바일 애플리케이션을 구성하는 다수의 실행 데이터를 구분하여 미리 저장하는 단계와,

(b) 상기 모바일 애플리케이션을 실행하여 제공하는 이동통신 단말기로부터 애플리케이션 요청 이벤트를 수신하는 단계와,

(c) 상기 애플리케이션 요청 이벤트에 대응하여 상기 다수의 실행 데이터 중에서 상기 이동통신 단말기에 제공할 전송 실행 데이터를 추출하는 단계와.

(d) 추출된 전송 실행 데이터를 상기 이동통신 단말기에게 전송하는 단계를 포함하는 모바일 애플리케이션 제공 방법.

【청구항 2】

제1항에 있어서. 상기 다수의 실행 데이터는 상기 모바일 애플리케이션의 장면에 대한 실행 코드, 화면 데이터 또는 리소스 데이터를 포함하는 것인 모바일 애플리케이션 제공 방법.

【청구항 3】

제1항에 있어서.
상기 단계 (b)는, (b-1) 상기 이동통신 단말기에 대한 장치 식별 정보 또는 상기 이동통신 단말기의 사용자 식별 정보 또는 상기 실행 데이터의 식별 정보 중 어느 하나 이상을 포함하는 상기 에플리케이션 요청 이벤트를 수신하는 단계를 포함하는 것인 모바일 에플리케이션 제공 방법.

【청구항 4】

제3항에 있어서,

상기 단계 (c)는, (c-1) 상기 장치 식별 정보 또는 상기 사용자 식별 정보 또는 상기 실행 데이터의 식별 정보를 기초로 상기 전송 실행 데이터를 추출하는 단계를 포함하는 것인 모바일 에플리케이션 제공 방법.

【청구항 5】

제1항에 있어서, 상기 단계 (b) 이전에,

(e) 상기 에플리케이션 요청 이벤트에 대한 다수의 시나리오에 대응한 다수의 제어 노드를 포함하는 다수의 제어 프로파일을 미리 저장하는 단계를 더 포함하고,

상기 단계 (c)는, (c-2) 상기 다수의 제어 프로파일 중에서 상기 에플리케이션 요청 이벤트에 적합한 제어 프로파일을 기초로 상기 전송 실행 데이터를 추출하는 단계를 포함하는 것인 모바일 에플리케이션 제공 방법.
【청구항 6】

제5항에 있어서,
양기 제어 노드는 상기 다수의 실행 데이터 중에서 대응하는 실행 데이터에 대한 식별 정보를 포함하여 상기 전송 실행 데이터를 추출하는 것인 모바일 애플리케이션 제공 방법.

【청구항 7】

제5항에 있어서,
양기 제어 노드는 상기 전송 실행 데이터의 추출을 위하여 대응하는 실행 데이터에 연관되거나 다른 제어 프로파일에 연관되거나 다른 제어 프로파일의 다른 제어 노드와 연관되는 것인 모바일 애플리케이션 제공 방법.

【청구항 8】

제7항에 있어서,
양기 제어 프로파일 또는 상기 제어 노드 각각은 식별자 형태로 표현되고,
양기 연관은 상기 식별자에 대한 링크 형태로 표시되는 것인 모바일 애플리케이션 제공 방법.

【청구항 9】

모바일 애플리케이션을 수신하여 제공하는 이동통신 단말기에서의 모바일 애플리케이션 제공 방법으로서,

(a) 모바일 애플리케이션의 실행을 위하여 상기 모바일 애플리케이션의 초기
실행 데이터를 요청하는 애플리케이션 요청 이벤트를 생성하는 단계와,

(b) 상기 애플리케이션 요청 이벤트를 상기 모바일 애플리케이션을 제공하는 애플리케이션 제공 서버에게 전송하는 단계와,

(c) 상기 애플리케이션 제공 서버로부터 전송되는 상기 애플리케이션 요청 이벤트에 대한 상기 모바일 애플리케이션의 상기 초기 실행 데이터를 수신하여 실행하는 단계와.

(d) 상기 초기 실행 데이터의 실행 도중에 필요한 추가 실행 데이터를 요청 하는 추가 애플리케이션 요청 이벤트를 생성하는 단계와.

(e) 상기 추가 애플리케이션 요청 이벤트를 상기 애플리케이션 제공 서버에 전송하는 단계와.

(f) 상기 애플리케이션 제공 서버로부터 전송되는 상기 추가 애플리케이션 요청 이벤트에 대한 상기 모바일 애플리케이션의 상기 추가 실행 데이터를 수신하여 실행하는 단계,

를 포함하는 모바일 애플리케이션 제공 방법.

【청구항 10】

제9항에 있어서,

상기 애플리케이션 요청 이벤트 또는 상기 추가 애플리케이션 요청 이벤트는 이동통신 단말기에 대한 장치 식별 정보 또는 상기 이동통신 단말기의 사용자 식별 정보 또는 사용자 입력 정보 또는 상기 실행 데이터의 식별 정보 중 어느 하나 이

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상을 포함하는 것인 모바일 애플리케이션 제공 방법.

【청구항 11】

제9항에 있어서,

상기 초기 실행 테이터는 상기 모바일 애플리케이션의 초기 장면에 대한 실행 코드, 화면 데이터 또는 리소스 데이터인 것이 모바일 애플리케이션 제공 방법.

【청구항 12】

제9항에 있어서,

상기 추가 실행 테이터는 상기 초기 실행 테이터를 기초로 한 상기 모바일 애플리케이션의 실행 도중에 사용자 입력에 대응하여 추가적으로 표시하여야 할 장면에 대한 실행 코드, 화면 데이터 또는 리소스 데이터인 것이 모바일 애플리케이션 제공 방법.

【청구항 13】

제1항 내지 12항 중 어느 한 항에 따른 모바일 애플리케이션 제공 방법의 각 단계를 실현시키기 위한 프로그램을 기록한 컴퓨터로 판독 가능한 기록 매체.

36-33
【도면】

【도 1】

시작

- S110: 모바일 앱플리케이션의 실행 데이터를 구분하여 저장
- S130: 이동통신 단말기로부터 앱플리케이션 요청 이벤트 수신
- S150: 이동통신 단말기에 전송할 전송 실행 데이터 추출
- S170: 전송 실행 데이터를 이동통신 단말기에로 전송

종료
Title: METHOD OF PROVIDING MOBILE APPLICATION AND COMPUTER-READABLE MEDIUM HAVING THEREON PROGRAM PERFORMING FUNCTION EMBODYING THE SAME

Abstract: A method of providing a mobile application and a computer-readable medium having thereon a program performing a function embodying the same are disclosed. In accordance with the method of the present invention, a transmission time and a loading time of the mobile application, and a limitation on a number and a size of the mobile application are minimized, and providing the personalized mobile application is possible.
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**Total IND.:** 2

**Total DEP.:** 22