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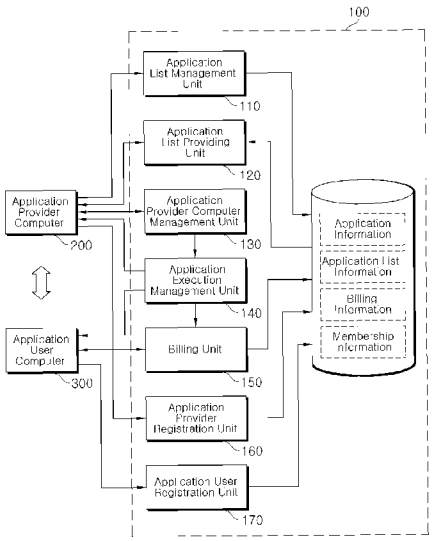
(54) **Title:** APPLICATION SHARING SERVICE SYSTEM, APPLICATION PROVIDER'S CLIENT MODULE AND APPLICATION USER'S CLIENT MODULE FOR APPLICATION SHARING SERVICE



(57) **Abstract:** The present invention provides an application sharing service system, an application provider's client module for application sharing service, and an application user's client module for application sharing service, which enables an application user computer to share an application executed on a remote application provider computer. Accordingly, since the application shared by the application user computer is installed and executed on the application provider computer, the application user computer requires less memory to execute the application, and uses the application regardless of its own specification.

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Description

APPLICATION SHARING SERVICE SYSTEM, APPLICATION PROVIDER'S CLIENT MODULE AND APPLICATION USER'S CLIENT MODULE FOR APPLICATION SHARING SERVICE

Technical Field

[1] The present invention relates to an application sharing service system, an application provider's client module for application sharing service, and an application user's client module for application sharing service. More particularly, the present invention relates to application sharing technology which enables applications to be executed on a remote user computer.

Background Art

[2] There has conventionally been proposed an application sharing technology which enables a user computer to access to an application of another user computer shared over an internal network and to execute the application thereon.

[3] However, in this case, even though the application exists on the other user computer, the application is actually executed on the user computer. Accordingly, the application may not be properly executed due to a difference in performance between the two user computers.

[4] The present invention provides application sharing technology which enables an application user computer to share applications executed on a remote application provider computer.

[5] According to the present invention, since the application is installed and executed on the application provider computer, the application user computer requires less memory to execute the application, and uses the application regardless of its own specification.

Disclosure of Invention

Technical Solution

[6] The present invention provides an application sharing service system, an application provider's client module for application sharing service, and an application user's client module for application sharing service, which enables an application user computer to share an application executed on a remote application provider computer.

[7] Additional features of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention.

Advantageous Effects

[8] Since an application shared by an application user computer is installed and executed on an application provider computer, the application user computer requires less memory to execute the application, and can use the application regardless of its own specification.

Brief Description of the Drawings

[9] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention, and together with the description serve to explain the principles of the invention.

[10] Fig. 1 illustrates an application sharing service system according to the present invention.

[11] Fig. 2 illustrates a block diagram of an application sharing service system according to an exemplary embodiment of the invention.

[12] Fig. 3 illustrates a flow chart of an application sharing service system according to an exemplary embodiment of the invention.

[13] Fig. 4 illustrates a block diagram of an application provider's client module for application sharing service according to an exemplary embodiment of the invention.

[14] Fig. 5 illustrates a flow chart of an application provider's client module for application sharing service according to an exemplary embodiment of the invention.

[15] Fig. 6 illustrates a block diagram of an application user's client module for application sharing service according to an exemplary embodiment of the invention.

[16] Fig. 7 illustrates a flow chart of an application user's client module for application sharing service according to an exemplary embodiment of the invention.

Best Mode for Carrying Out the Invention

[17] The present invention discloses a system for application sharing service, including: an application list management unit to manage an application list by registering application information provided by at least one application provider computer and storing the application information in a database; an application list providing unit to provide the application list to an application user computer at the request of the application user computer, and to allow the application user computer to select an application; an application provider computer management unit to refer to the database to detect a list of application provider computers which provide the application, and to select an optimum application provider computer from current state information of the detected application provider computers; and an application execution management unit to control application sharing between the application provider computer and the application user computer by allowing the application provider computer selected by the application provider computer management unit to execute the application

requested by the application user computer.

[18] The present invention also discloses an application provider's client module for application sharing services, including: a retrieval unit to retrieve hardware specification of an application provider computer and an application list of the application provider computer; a registration unit to select an application to be shared by an application user computer from among the application list through the application sharing service, and to transmit information of the selected application and the hardware specification retrieved by the retrieval unit to an application sharing service system to request application sharing service registration from the application sharing service system; and a shared application execution unit to execute a registered application at the request of the application sharing service system, and to allow the application user computer to control the application.

[19] The present invention also discloses an application user's client module for application sharing services, including: an environment setup unit to set an application sharing service environment including a directory which is to be used by an application to be executed and shared by an application provider computer through application sharing service; an application sharing service request unit to receive a registered application list from an application sharing service system, and to select an application from among the application list; and an application remote control unit to make remote control of an application requested by the application sharing service request unit by receiving an authority to control the application from the application provider computer which executes the application, and to set the directory set by the environment setup unit as a virtual directory which is to be used by the application.

[20] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

Mode for the Invention

[21] The invention is described more fully hereinafter with reference to the accompanying drawings, in which exemplary embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein. Rather, these embodiments are provided so that this disclosure is thorough, and will fully convey the scope of the invention to those skilled in the art. In the drawings, the size and relative sizes of layers and regions may be exaggerated for clarity. Like reference numerals in the drawings denote like elements.

[22] It will be understood that when an element or layer is referred to as being "on" or "connected to" another element or layer, it can be directly on or directly connected to

the other element or layer, or intervening elements or layers may be present. In contrast, when an element is referred to as being "directly on" or "directly connected to" another element or layer, there are no intervening elements or layers present.

[23] Fig. 1 illustrates an application sharing service system according to the present invention.

[24] An application sharing service system 100 is software executed on a server, which enables applications executed on an application provider computer to be shared by a remote application user computer. The application sharing service system 100 may charge an application user for sharing the applications.

[25] An application provider's client module 200 is an agent program which is executed on the application provider computer to provide application sharing services. An application user's client module 300 is an agent program which is executed on the application user computer to provide application sharing services.

[26] The application provider's client module 200 accesses to the application sharing service system 100 to register applications to be shared, executes the applications at the request of the application user computer, and shares the applications so that the application user computer can operate the applications. The application provider may charge the application user for using the applications.

[27] The application user's client module 300 requests an application sharing service from the application sharing service system 100, receives authority to operate a requested application from the application provider computer, and makes remote control of the application which is executed on the application provider computer. The application user may pay for using the application.

[28] Therefore, the application user computer requires less memory to execute the application and can use the application regardless of its own specification.

[29] Fig. 2 illustrates a block diagram of an application sharing service system according to an exemplary embodiment of the invention.

[30] The application sharing service system 100 includes an application list management unit 110, an application list providing unit 120, an application provider computer management unit 130, and an application execution management unit 140.

[31] The application list management unit 110 registers application information from at least one application provider computer, stores the application information in a database, and manages a registered application list.

[32] The application information may include application identification information, provider identification information and hardware specification information.

[33] For instance, the application identification information is an application name, the provider identification information is an application provider ID or an IP address of an application provider computer, and the hardware specification information is CPU

speed, memory capacity, and network speed.

[34] That is, when an application provider accesses to the application sharing service system 100 through his/her own computer, transmits application information including application identification information, provider identification information and hardware specification information to the application sharing service system 100, and requests an application from the application sharing service system 100, the application list management unit 110 of the application sharing service system 100 registers the application information, stores the application information in the database, and manages a registered application list.

[35] The application list providing unit 120 provides the application list to the application user computer at the request of the application user computer, and allows the application user computer to select an application to be shared from among the application list.

[36] For instance, when an application user accesses to the application sharing service system 100 through his/her own computer and requests an application sharing service from the application sharing service system 100, the application sharing service system 100 provides the registered application list to the application user computer through the application list providing unit 120, and allows the application user computer to select an application to be shared from among the application list.

[37] When the application user computer selects the application to be shared, the application provider computer management unit 130 refers to the database to detect a list of application provider computers which provide the selected application, and selects an optimum application provider computer from current state information of the detected application provider computers.

[38] The current state information of the application provider computers may include information about a network access state of each application provider computer, information about whether or not each application provider computer uses the application sharing service, and information about the operation environment of each application provider computer. The operation environment information may include hardware specification information, such as CPU speed, memory capacity, and network speed, and operating system (OS) information.

[39] That is, when the application user computer selects an application, the application provider computer management unit 130 of the application sharing service system 100 detects a list of application provider computers providing the application from the application information stored in the database, collects the current state information of the detected application provider computers, and selects an optimum application provider computer which is properly connected to a network, is not currently using an application sharing service, and has hardware specification or operating system

suitable for executing the application.

[40] The application execution management unit 140 controls the application sharing between the application provider computer and the application user computer by allowing the application requested by the application user computer to be executed through the application provider computer selected by the application provider computer management unit 130.

[41] That is, when an optimum application provider computer is selected by the application provider computer management unit 130, the application sharing service system 100 instructs the selected application provider computer to execute the application requested by the application user computer, and makes a direct connection between the application provider computer and the application user computer so that the application can be shared by the application provider computer and the application user computer.

[42] When the application user computer cannot make a direct access to the application provider computer due to a virtual private network or firewall, the application execution management unit 140 may enable a connection between the application user computer and the application provider computer.

[43] Such a peer-to-peer (P2P) network is well known in the art and a detailed description thereof will thus be omitted herein.

[44] Accordingly, when the application executed on the application provider computer is shared by the application user computer, the application is installed and executed on the application provider computer. Therefore, the application user computer requires less memory to execute the application, and can use the application regardless of its own specification.

[45] The application sharing service system 100 may further include a billing unit 150.

[46] The billing unit 150 charges the application user computer for using the application executed on the application provider computer. The billing unit 150 may charge the application user computer based on the time that the application user computer uses the application executed on the application provider computer. The application user computer may make an online payment, such as Internet credit card payment, Internet fund transfer, or mobile phone payment.

[47] The application sharing service system 100 may further include an application provider registration unit 160 and an application user registration unit 170.

[48] The application provider registration unit 160 performs a membership registration process at the request of the application provider computer, and provides a registered application provider computer with an application provider's client module 200 for application sharing service.

[49] The application user registration unit 170 performs a membership registration

process at the request of the application user computer, and provides a registered application user computer with an application user's client module 300 for application sharing service.

[50] The application list management unit 110 of the application sharing service system 100 may check whether or not an application provided by the application provider computer can be properly executed on the application provider computer, and register information of the application when the application can be properly executed on the application provider computer.

[51] The application list management unit 110 of the application sharing service system 100 may select and register available applications among a list of applications requested by the application provider computer. In this case, it is possible to avoid infringement of copyrights.

[52] Fig. 3 illustrates a flow chart of operation of an application sharing service system according to an exemplary embodiment of the invention.

[53] When an application provider accesses to the application sharing service system 100 through his/her own computer and requests an application from the application sharing service system 100 (S110), the application sharing service system 100 registers through the application list management unit 110 application information provided by the application provider computer and stores the application information in the database (S120).

[54] When an application user accesses to the application sharing service system 100 through his/her own computer and requests an application sharing service (S130), the application sharing service system 100 provides a registered application list to the application user computer through the application list providing unit 120, and allows the application user computer to select an application to be shared (S140).

[55] When an application is selected by the application user computer, the application sharing service system 100 detects through the application provider computer management unit 130 a list of application provider computers providing the application from the application information stored in the database (S150), and selects an optimum application provider computer which is properly connected to the network, is not currently using the application sharing service, and has hardware specification or operating system (OS) suitable for executing the application (S160).

[56] When the optimum application provider computer is selected, the application sharing service system 100 allows the selected application provider computer to execute the application requested by the application user computer (S170), so that the application can be shared by the application provider computer and the application user computer.

[57] That is, since the application executed on the application provider computer is

shared by the remote application user computer and installed and executed on the application provider computer, the application user computer requires less memory to execute the application, and can use the application regardless of its own specification.

[58] Fig. 4 illustrates a block diagram of an application provider's client module for application sharing service according to an exemplary embodiment of the present invention.

[59] The application provider's client module 200 includes a retrieval unit 210, an application registration unit 220, and a shared application execution unit 230.

[60] The retrieval unit 210 retrieves hardware specification of and an application list of an application provider computer. The hardware specification may include the CPU speed, memory capacity and network speed of the application provider computer.

[61] When the application provider's client module 200 transmitted from the application sharing service system 100 to the application provider computer is installed and executed on the application provider computer, the application provider's client module 200 retrieves through the retrieval unit 210 the hardware specification of and an application list of the application provider computer.

[62] For instance, the retrieval unit 210 can obtain information on the hardware specification and application list from system management information managed by the operating system of the application provider computer. A method for obtaining such information is well known in the art and a detailed description thereof will thus be omitted herein.

[63] The application registration unit 220 allows the application user computer to select an application from among the application list retrieved by the retrieval unit 210, transmits information on the selected application and the hardware specification retrieved by the retrieval unit 210 to the application sharing service system 100, and requests registration of the application sharing service from the application sharing service system 100.

[64] The shared application execution unit 230 executes the registered application at the request of the application sharing service system 100, and allows the application user computer to control the application.

[65] For instance, when the application sharing service system 100 selects an optimum application provider computer to execute a registered application requested by an application user, the application sharing service system 100 requests the application provider computer to execute the registered application. When the application provider computer is requested to execute the registered application, the application provider's client module 200 executes the application through the shared application execution unit 230 and allows the application user computer to control the application so that the application executed on the application provider computer can be shared by the ap-

plication user computer.

[66] The application provider's client module 200 may further include an operation interruption unit 240.

[67] The operation interruption unit 240 prevents the application provider computer from operating the application which is being controlled by the application user computer.

[68] In addition, the operation interruption unit 240 may prevent the application user computer from operating the application provider computer through the application controlled by the application user computer.

[69] That is, when the application provider computer cannot carry out multitask processing, the application user is prevented from using the mouse and keyboard of the application provider computer through the operation interruption unit 240 while the application user controls the application. When the application provider computer can carry out multitask processing, the application provider is prevented from accessing the application so that the application provider cannot view the application shared by the application user through the operation interruption unit 240.

[70] In addition, when the application user uses the application, the application user is prevented from referring to, retrieving, loading and storing directories and files in the application provider computer through the operation interruption unit 240 so that the application user cannot operate the application provider computer through the application controlled by the application user computer.

[71] The application provider's client module 200 may further include an application termination unit 250.

[72] The application termination unit 250 transmits an application termination message to the application user computer executing an application, and terminates the application after a predetermined time.

[73] That is, when the application provider needs to terminate an application which is being executed in the application provider computer and is being used by the application user, the application transmits an application termination message through the application termination unit 250 to the application user computer executing the application, and terminates the application after a predetermined time so that the application user can prepare for the termination of the application.

[74] The application provider's client module 200 may further include an environment setup unit 260.

[75] The environment setup unit 260 sets an execution environment for an application which is provided through the application sharing service. The execution environment for an application may include time setting for providing the application sharing service.

[76] That is, the application provider sets the execution environment through the environment setup unit 260 to provide the application sharing service to the application user.

[77] The application provider's client module 200 may further include a service use notification unit 270.

[78] The service use notification unit 270 notifies the application provider that the application is being shared by the application user computer through the application sharing service.

[79] That is, when the application user computer uses an application provided by the application provider computer, i.e., when an application is executed on the application provider computer in accordance with the instruction of the application sharing service system 100, the service use notification unit 270 notifies the application provider that the application is being shared by the application user computer.

[80] Fig. 5 is a flow chart of the operation of the application provider's client module 200 according to an exemplary embodiment of the present invention.

[81] When the application provider's client module 200 is transmitted from the application sharing service system 100 to the application provider computer and is executed, the application provider's client module 200 retrieves through the retrieval unit 210 the hardware specification of the application provider computer, such as CPU speed, memory capacity and network speed, and the application list (S210).

[82] The application provider's client module 200 provides the application list to the application provider through the application registration unit 220, and allows the application provider to select an application to be shared by the application user computer through the application sharing service (S220).

[83] Information on the selected application and the retrieved hardware specification are transmitted to the application sharing service system 100 to request registration of the application sharing service from the application sharing service system 100 (S230).

[84] When the application sharing service system 100 requests the application provider's client module 200 to execute the registered application (S240), the application provider's client module 200 executes the application through the shared application execution unit 230, and hands over an authority to control the application to the application user computer (S250).

[85] Fig. 6 is a block diagram of an application user's client module according to an exemplary embodiment of the present invention.

[86] The application user's client module 300 includes an environment setup unit 310, an application sharing service request unit 320, and an application remote control unit 330.

[87] The environment setup unit 310 sets an application sharing service environment

including a directory used by an application which is executed and shared by the application provider computer.

[88] That is, when the application user's client module 300 is transmitted from the application sharing service system 100 to the application user computer and is executed, the application user sets an application sharing service environment through the environment setup unit 310.

[89] The application sharing service request unit 320 requests the application sharing service from the application sharing service system 100, and selects an application from among the application list received from the application sharing service system 100.

[90] When the application user computer accesses to the application sharing service system 100 to request the application sharing service through the application sharing service request unit 320, the application sharing service system 100 provides a registered application list to the application user computer so that the application user can select an application to be shared.

[91] The application remote control unit 330 receives an authority to control an application, which is requested by the application sharing service request unit 320, from the application provider computer executing the application, and performs remote control of the application. In this case, the application remote control unit 330 sets the directory set by the environment setup unit 310 as a virtual directory used by the application.

[92] When an application is selected by the application user, the application sharing service system 100 selects an optimum computer from among application provider computers which provide the application, and instructs the optimum computer to execute the application. The optimum application provider computer hands over an authority to control the application to the application user computer. The application user's client module 300 receives the authority through the application remote control unit 330 and performs remote control of the application. The application remote control unit 330 sets a directory set by the environment setup unit 310 as a virtual directory used by the application, and stores files processed by the application in the directory.

[93] The application user's client module 300 may further include a monitoring unit 340.

[94] The monitoring unit 340 monitors the use time of the application executed and shared by the application provider computer, and transmits information on the use time of the application to the application sharing service system 100. While the monitoring unit 340 may transmit the use time of application to the application sharing service system 100 when the application is finished, the monitoring unit 340 preferably transmits the use time of application at predetermined time intervals for a secure

billing process.

[95] While the monitoring unit 340 is preferably provided in the application user's client module 300, the monitoring unit 340 may be provided in the application sharing service system 100 when the application user computer cannot make a direct access to the application provider computer such that the application sharing service system 100 makes a connection between the application user computer and the application provider computer.

[96] The application remote control unit 330 of the application user's client module 300 preferably terminates the application upon receipt of an application termination instruction from the application user or of an application termination message from the application provider computer, so that the application can be terminated when the application provider requests the termination of the application or the application is executed in an abnormal manner.

[97] Fig. 7 is a flow chart of the operation of the application user's client module 300 according to an exemplary embodiment of the present invention.

[98] When the application user's client module 300 is transmitted from the application sharing service system 100 to the application user computer and is executed, the application user sets an application sharing service environment, including a directory used by a shared application, through the environment setup unit 310 of the application user's client module 300 (S310).

[99] When the application user computer accesses to the application sharing service system 100 to request an application sharing service through the application sharing service request unit 320 (S320), the application sharing service system 100 provides a registered application list to the application user computer and allows the application user to select an application to be shared (S330).

[100] When an application is selected by the application user, the application sharing service system 100 selects an optimum computer from among application provider computers which provide the application, and instructs the optimum computer to execute the application (S340). The optimum application provider computer hands over an authority to control the application to the application user computer. The application user's client module 300 receives the authority through the application remote control unit 330 and performs remote control of the application (S350).

[101] As apparent from the above description, since the application shared by the application user computer is installed and executed on the application provider computer, the application user computer requires less memory to execute the application, and can use the application regardless of its own specification.

[102] It will be apparent to those skilled in the art that various modifications and variation can be made in the present invention without departing from the spirit or scope of the

invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

Industrial Applicability

[103] The present invention can be applied to an application sharing service system, an application provider's client module for application sharing service, and an application user's client module for application sharing service. More particularly, the present invention can efficeintly be applied to application sharing technology which enables applications to be executed on a remote user computer.

[104]

Claims

[1] A system for application sharing service, comprising:
an application list management unit to manage an application list by registering application information provided by at least one application provider computer and storing the application information in a database;
an application list providing unit to provide the application list to an application user computer at the request of the application user computer, and to allow the application user computer to select an application;
an application provider computer management unit to refer to the database to detect a list of application provider computers which provide the application, and to select an optimum application provider computer from current state information of the detected application provider computers; and
an application execution management unit to control application sharing between the application provider computer and the application user computer by allowing the application provider computer selected by the application provider computer management unit to execute the application requested by the application user computer.

[2] The system of claim 1, further comprising a billing unit to charge the application user computer for using the application executed on the application provider computer.

[3] The system of claim 2, further comprising an application provider registration unit to register an application provider computer as an application sharing service membership at the request of the application provider computer, and to provide the registered application provider computer with an application provider's client module for application sharing service.

[4] The system of claim 3, further comprising an application user registration unit to register an application user computer as an application sharing service membership at the request of the application user computer, and to provide the registered application user computer with an application user's client module for application sharing service.

[5] The system of any one of claims 1 to 4, wherein the application execution management unit allows an application user computer to access to an application provider computer when the application user computer cannot access directly to the application provider computer.

[6] The system of any one of claims 1 to 4, wherein the application list management unit checks whether or not an application provided by the application provider computer can be properly executed on hardware of the application provider

computer, and registers information of the application which can be properly executed.

[7] The system of any one of claims 1 to 4, wherein the application list management unit selects available applications from among a list of applications requested by the application provider computer and registers the selected applications.

[8] The system of any one of claims 1 to 4, wherein the application information comprises application identification information, provider identification information, and hardware specification information.

[9] The system of any one of claims 1 to 4, wherein the current state information of application provider computers which is collected by the application provider computer management unit comprises information about a network access state of each application provider computer, information on whether or not each application provider computer uses application sharing service, and information about operation environment of each application provider computer.

[10] The system of any one of claims 2 to 4, wherein the billing unit charges the application user computer for using the application executed on the application provider computer on a time basis.

[11] An application provider's client module for application sharing services, comprising:

a retrieval unit to retrieve hardware specification of an application provider computer and an application list of the application provider computer;

a registration unit to select an application to be shared by an application user computer from among the application list through the application sharing service, and to transmit information of the selected application and the hardware specification retrieved by the retrieval unit to an application sharing service system to request application sharing service registration from the application sharing service system; and

a shared application execution unit to execute a registered application at the request of the application sharing service system, and to allow the application user computer to control the application.

[12] The application provider's client module of claim 11, further comprising an operation interruption unit to prevent the application provider computer from operating an application which is being controlled by the application user computer.

[13] The application provider's client module of claim 12, wherein the operation interruption unit further prevents the application user computer from operating the application provider computer through an application which is being controlled by the application user computer

[14] The application provider's client module of any one of claims 11 to 13, further comprising an application termination unit to transmit an application terminal message to an application user computer which executes an application, and to terminate the application after a predetermined time.

[15] The application provider's client module of any one of claims 11 to 13, further comprising an environment setup unit to set an execution environment of an application which is to be provided through the application sharing service.

[16] The application provider's client module of claim 15, wherein the execution environment comprises setting a time period to provide the application sharing service.

[17] The application provider's client module of any one of claims 11 to 13, wherein the hardware specification comprises CPU speed, memory capacity, and network speed of the application provider computer.

[18] The application provider's client module of any one of claims 11 to 13, further comprising a service use notification unit to notify an application provider that an application is being shared by an application user computer through the application sharing service.

[19] An application user's client module for application sharing services, comprising:
an environment setup unit to set an application sharing service environment including a directory which is to be used by an application to be executed and shared by an application provider computer through application sharing service;
an application sharing service request unit to receive a registered application list from an application sharing service system, and to select an application from among the application list; and
an application remote control unit to make remote control of an application requested by the application sharing service request unit by receiving an authority to control the application from the application provider computer which executes the application, and to set the directory set by the environment setup unit as a virtual directory which is to be used by the application.

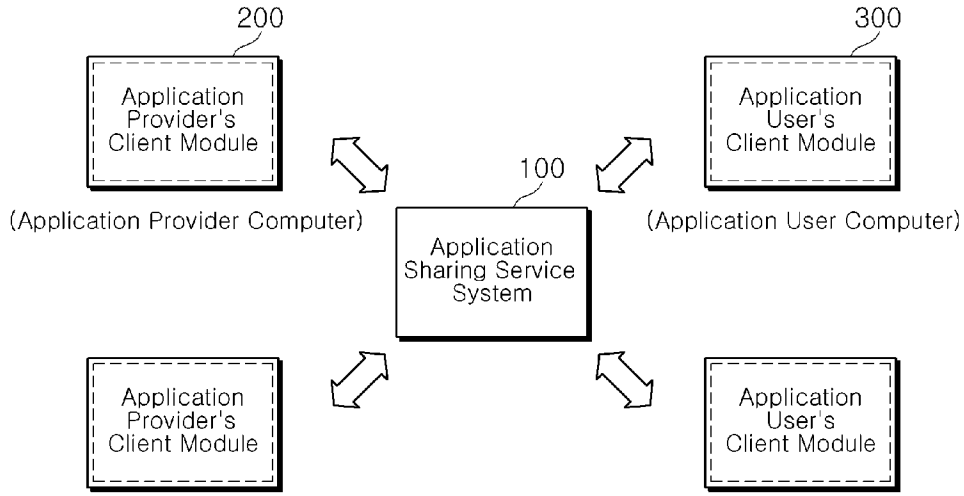
[20] The application user's client module of claim 19, further comprising a monitoring unit to monitor use time of an application which is executed and shared through the application provider computer, and transmits information about the use time of the application to the application sharing service system.

[21] The application user's client module of claim 20, wherein the monitoring unit transmits the use time of the application to the application sharing service system at predetermined time intervals.

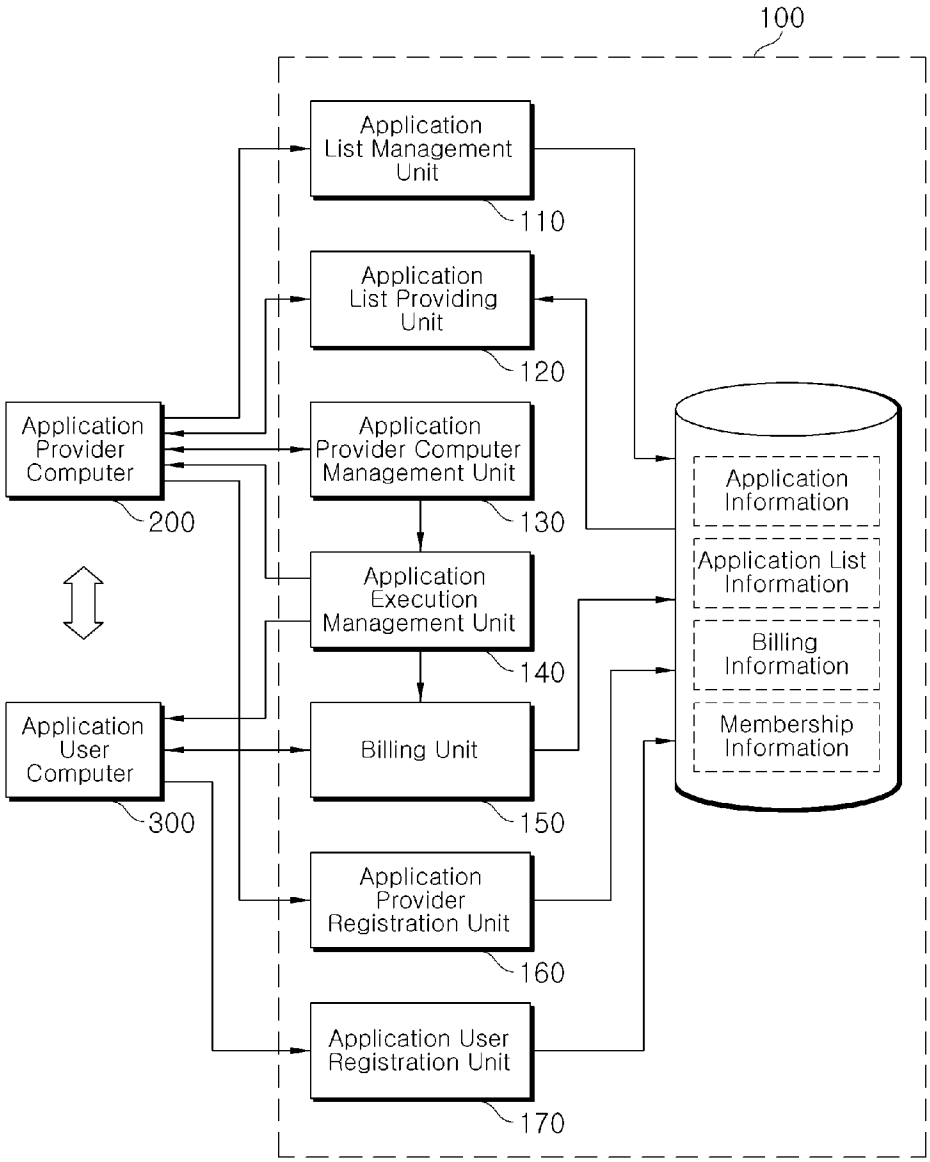
[22] The application user's client module of any one of claims 19 to 21, wherein the application remote control unit terminates an application either upon receipt of

an application termination instruction from the application user, or upon receipt of an application termination message from the application provider computer.

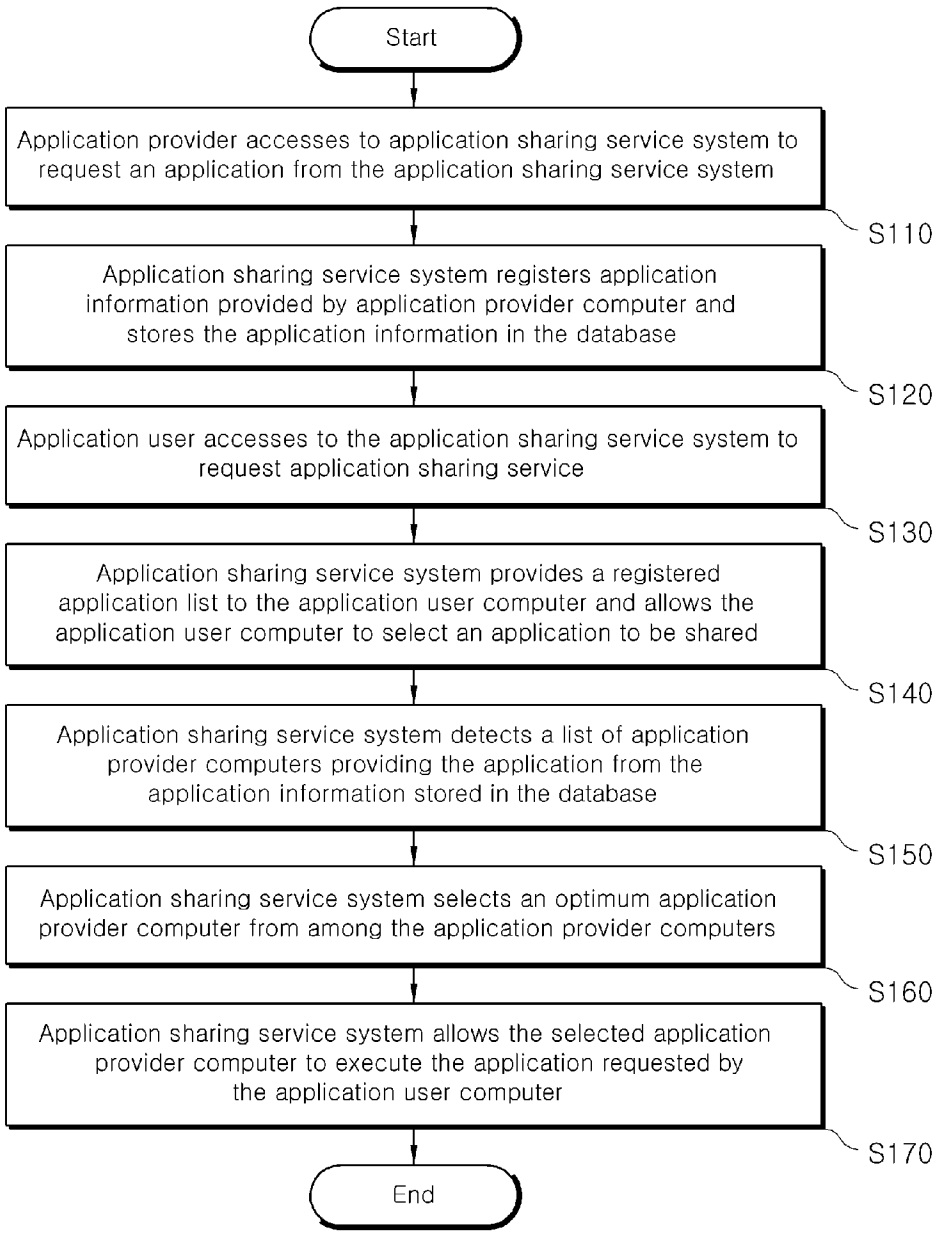
[Fig. 1]


200
Application Provider's Client Module
(Application Provider Computer)
300
Application User's Client Module
(Application User Computer)
100
Application Sharing Service System
Application Provider's Client Module
Application User's Client Module

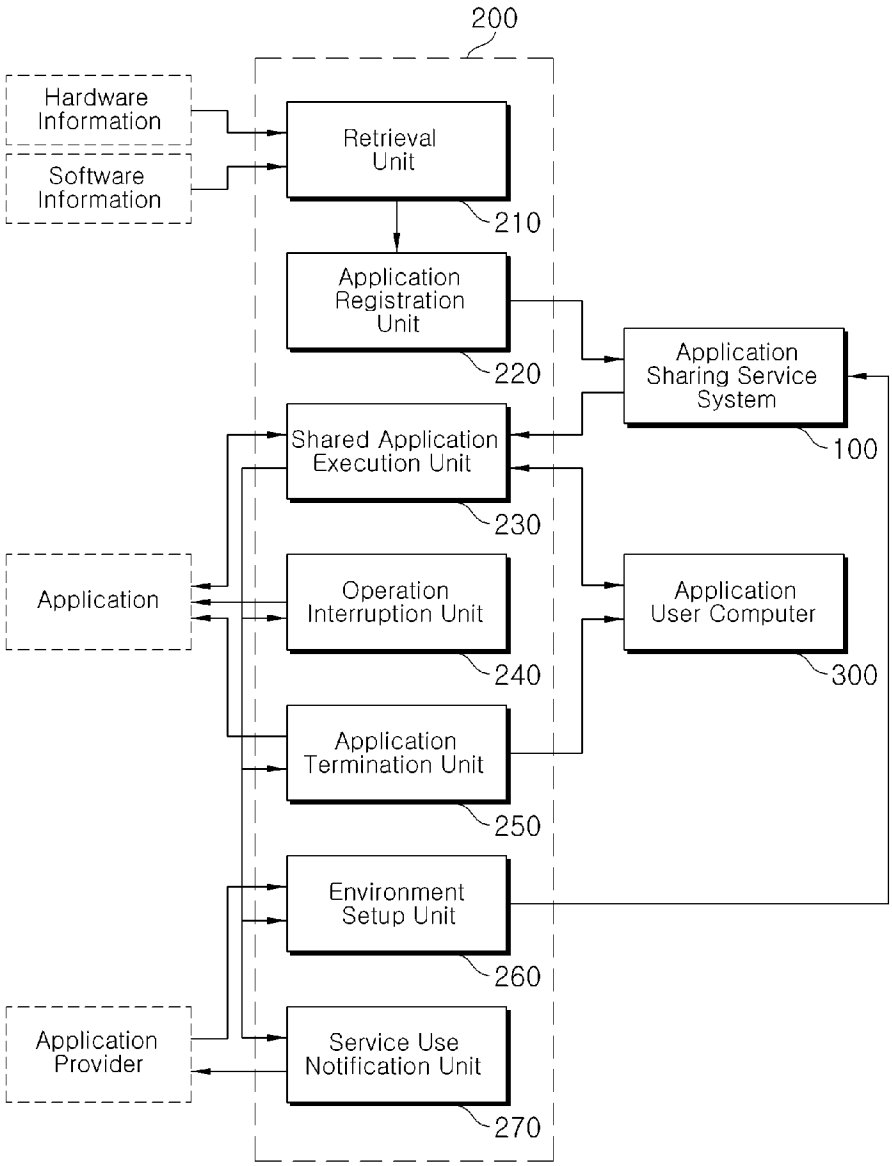
[Fig. 2]


100
Application List Management Unit
110
Application List Providing Unit
120
Application Provider Computer Management Unit
130
Application Execution Management Unit
140
Billing Unit
150
Application Provider Registration Unit
160
Application User Registration Unit
170
Application Provider Computer
200
Application User Computer
300
Application Information
Application List Information
Billing Information
Membership Information

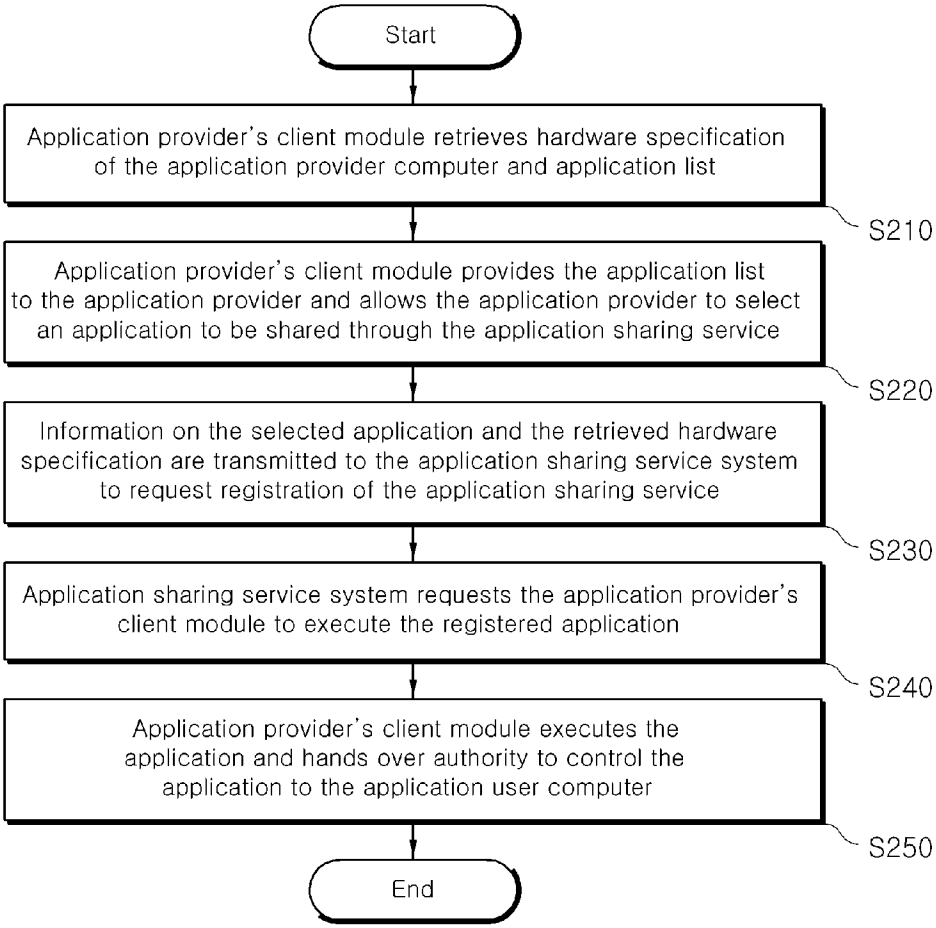
[Fig. 3]


Start
Application provider accesses to application sharing service system to request an application from the application sharing service system
S110
Application sharing service system registers application information provided by application provider computer and stores the application information in the database
S120
Application user accesses to the application sharing service system to request application sharing service
S130
Application sharing service system provides a registered application list to the application user computer and allows the application user computer to select an application to be shared
S140
Application sharing service system detects a list of application provider computers providing the application from the application information stored in the database
S150
Application sharing service system selects an optimum application provider computer from among the application provider computers
S160
Application sharing service system allows the selected application provider computer to execute the application requested by the application user computer
S170
End

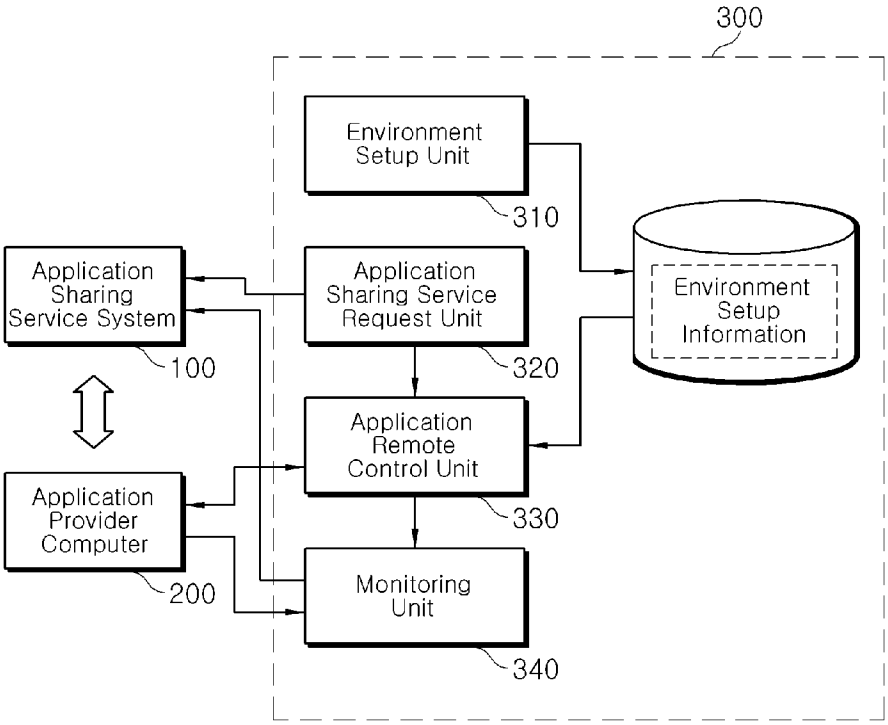
[Fig. 4]


200
Hardware Information
Software Information
Retrieval Unit
210
Application Registration Unit
220
Application Sharing Service System
100
Shared Application Execution Unit
230
Application
Operation Interruption Unit
240
Application User Computer
300
Application Termination Unit
250
Environment Setup Unit
260
Application Provider
Service Use Notification Unit
270

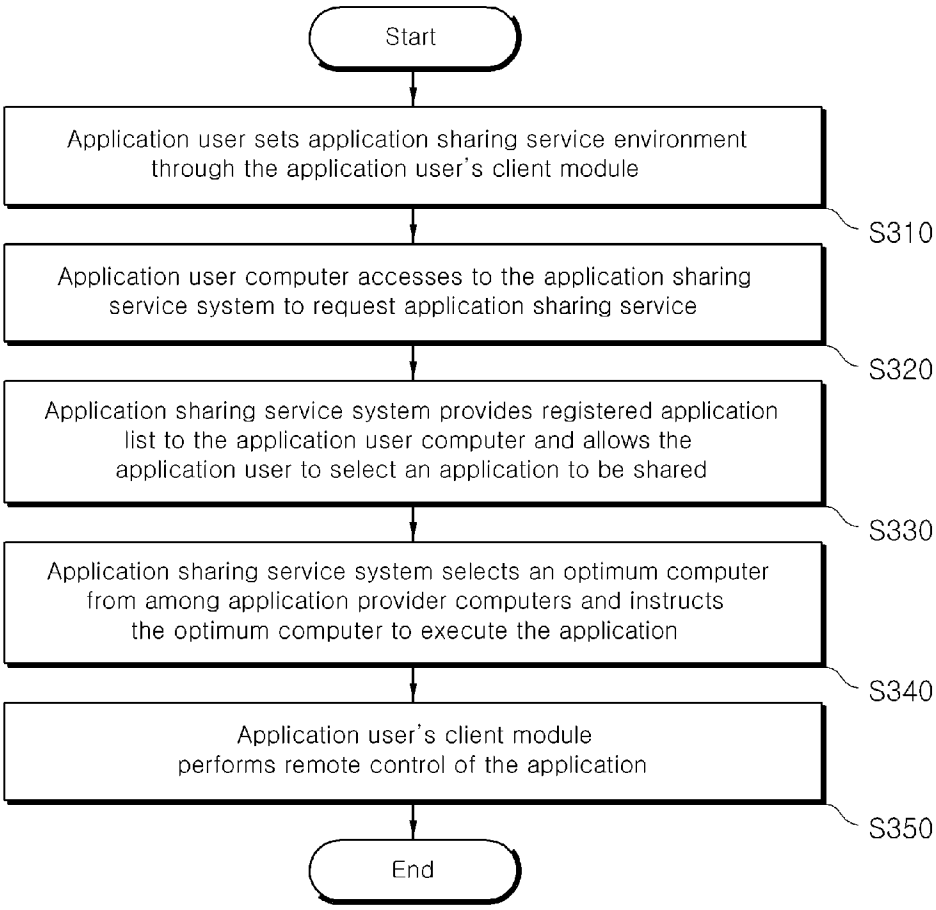
[Fig. 5]


Start
Application provider's client module retrieves hardware specification of the application provider computer and application list
S210
Application provider's client module provides the application list to the application provider and allows the application provider to select an application to be shared through the application sharing service
S220
Information on the selected application and the retrieved hardware specification are transmitted to the application sharing service system to request registration of the application sharing service
S230
Application sharing service system requests the application provider's client module to execute the registered application
S240
Application provider's client module executes the application and hands over authority to control the application to the application user computer
S250
End

[Fig. 6]


300
Environment Setup Unit
310
Application Sharing Service System
100
Application Sharing Service Request Unit
320
Environment Setup Information
Application Remote Control Unit
330
Application Provider Computer
200
Monitoring Unit
340

[Fig. 7]


Start
Application user sets application sharing service environment through the application user's client module
S310
Application user computer accesses to the application sharing service system to request application sharing service
S320
Application sharing service system provides registered application list to the application user computer and allows the application user to select an application to be shared
S330
Application sharing service system selects an optimum computer from among application provider computers and instructs the optimum computer to execute the application
S340
Application user's client module performs remote control of the application
S350
End

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2007/001533

A. CLASSIFICATION OF SUBJECT MATTER

G06F 15/16(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: G06F

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 application for Utility Models since 1975

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

eKIPASS(KIPO internal) "application sharing service", "server", "client", "remote" , "execution", "provider"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2001/09776 A1(LEE, TAE GYU) 08 February 2001 See the abstract, claims 1-35 and figures 1-12b.	1-22
A	US 2005/0138192 A1(MARK J. ENCARNACION et al.) 23 June 2005 See the abstract, claim 1 and figures 1-5.	1-22
A	US 6,757,729 B1(MURTHY DEVARAKONDA et al.) 29 June 2004 See the abstract, claims 1-17 and figures 1-4.	1-22
A	US 2004/0187104 A1(SHANTANU SARDESAI et al.) 23 September 2004 See the abstract, claim 1 and figures 1-6.	1-22

☐ 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 other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

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

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

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

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
15 JUNE 2007 (15.06.2007)	**15 JUNE 2007 (15.06.2007)**

Name and mailing address of the ISA/KR

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Facsimile No. 82-42-472-7140

Authorized officer

LEE, Jae kuen

Telephone No. 82-42-481-8368

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2007/001533

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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