

can provide the service, etc. for using the facility, etc. by using the user's mobile terminal (its UI) in various facilities, etc. Particularly, it is not required to introduce/maintain the dedicated device for the facility operator side, and therefore, maintenance operational cost, etc. can be suppressed, so that a low-cost system can be achieved. In this manner, a situation (target) for which the above described service is available widely increases so as to include a facility, etc. that has not been conventionally able to provide the above-described service due to the cost problem, etc., so that convenience of the user side, etc. is achieved.

MEANS FOR SOLVING THE PROBLEMS

In order to achieve the above-described object, a typical aspect of the present invention is a facility-UI distributing system for providing a service to a user of a facility for using the facility or apparatus in the facility, and has a feature having the following configurations.

The present system has a distributing device that distributes a program for forming the UI for providing the service for using the facility (in other words, a program for adding a function) (service software) to a mobile terminal of the user. The distributing device has: a communicating unit that communicates with the mobile terminal of the user and with the facility, the apparatus in the facility, or a facility operator; a managing unit that stores and manages a movable predetermined area associated with the facility or the apparatus in the facility and a program associated with the movable predetermined area; an area determining unit that determines whether or not the mobile terminal of the user exists inside or close to the movable predetermined area ~~or not~~; a distributing unit that distributes the program to the mobile terminal of the user which exists inside or close to the movable predetermined area; and a service providing unit that receives

information issued in accordance with an operation of the user for the UI formed by the program executed by the mobile terminal of the user, and notifies the operator of the facility or the apparatus in the facility associated with the program of the information,
5 wherein the service providing unit provides content in the user interface for manipulating operation of the movable predetermined area, in response to the area determining unit determining that the mobile terminal exists inside or is close to the movable predetermined area.

10 Moreover, for example, the service providing unit receives information of a service request issued in accordance with the operation of the user for the UI formed by the program executed by the mobile terminal of the user, notifies the operator of the facility or the apparatus in the facility associated with the program
15 of the information of the service request or predetermined information associated with the service request, transmits information of a response for the service request to a program of the mobile terminal, and causes the UI to output the information.

 Moreover, for example, the distributing device has a disabling
20 unit that disables the function added by the UI formed by the program distributed to the mobile terminal, and the disabling unit performs a processing of disabling the program of the mobile terminal if the mobile terminal of the user does not exist inside or is close to the movable predetermined area.

25 **EFFECTS OF THE INVENTION**

 According to the typical aspect of the present invention, in various facilities, etc., a low-cost system which can provide a service for using the facilities, etc., by using a mobile terminal (its UI) of a user can be achieved. Particularly, it is not required
30 to introduce/maintain a dedicated device, etc., for the facility operator side, and therefore, maintenance operational cost, etc. can be suppressed, so that the low-cost system can be achieved. This

manner increases situations (targets) in which the above-described service is available so as to include the facilities, etc., which have not conventionally been able to provide the service as described above due to cost problems, etc., and therefore, convenience, etc.

5 of the user side can be achieved.

BRIEF DESCRIPTIONS OF THE DRAWINGS

FIG. 1 is a diagram showing an overall outline configuration

CLAIMS

1. A facility-user-interface distributing system, to a user of a facility, which provides a service for usage
5 of the facility or an apparatus in the facility, the system comprising:

a distributing device that distributes a program to a mobile terminal of the user, the program for forming a user interface for providing the service for the usage,

10 wherein the distributing device has:

a communicating unit which communicates with the mobile terminal of the user and with the facility, the apparatus in the facility, or an operator of the facility;

a managing unit which stores and manages a movable
15 predetermined area and the program, the movable predetermined area associated with the facility or the apparatus in the facility, the program associated with the movable predetermined area;

an area determining unit which determines whether
20 or not the mobile terminal of the user exists inside or close to the movable predetermined area ~~or not~~;

a distributing unit which distributes the program to the mobile terminal of the user existing inside or close to the movable predetermined area; and

25 a service providing unit which receives information issued in accordance with an operation of the user for the user interface formed by the program executed by the mobile terminal of the user and which notifies the operator of the facility associated with the program or
30 notifies the apparatus in the facility of the information,

wherein the service providing unit provides

content in the user interface for manipulating operation
of the movable predetermined area in response to the area
determining unit determining that the mobile terminal
exists inside or is close to the movable predetermined
5 area.

2. The facility-user-interface distributing system
according to claim 1,

wherein the service providing unit receives
10 information of a service request issued in accordance
with the operation of the user for the user interface
formed by the program executed by the mobile terminal of
the user, notifies the operator of the facility
associated with the program or notifies the apparatus in
15 the facility of the information of the service request
or predetermined information associated with the service
request, transmits information of a response for the
service request to the program of the mobile terminal,
and causes the user interface to output the information
20 therefrom.

3. The facility-user-interface distributing system
according to claim 1,

wherein the distributing device has a disabling
25 unit which disables the user interface formed by the
program distributed to the mobile terminal, and

the disabling unit performs a processing of
disabling the program of the mobile terminal if the mobile
terminal of the user does not exist inside or is close
30 to the movable predetermined area.

4. The facility-user-interface distributing system

according to claim 3,

wherein the distributing device distributes key information with a valid time limit for enabling the program in accordance with the distribution of the
5 program to the mobile terminal,

the disabling unit enables the program if the key information within the valid time limit is provided in the mobile terminal, and

the disabling unit disables the program if the key
10 information within the valid time limit is not provided in the mobile terminal.

5. The facility-user-interface distributing system according to claim 1,

15 wherein the mobile terminal is provided with a touch display on which touch input and screen display can be performed, and

the mobile terminal displays graphical user interface information on a screen of the touch display
20 as the user interface formed by the program, and issues information to the facility in accordance with an operation of the touch input by the user for an element in the screen.

25 6. The facility-user-interface distributing system according to claim 1,

wherein the communicating unit has a function to communicate with the operator of the facility,

the managing unit sets the operator of the facility
30 as a destination of the notification, and

the service providing unit notifies the operator of the facility of information.

7. The facility-user-interface distributing system according to claim 1,

wherein the communicating unit has a function to
5 communicate with the apparatus in the facility,

the managing unit sets the apparatus in the facility as a destination of the notification,

the service providing unit notifies the apparatus in the facility of information, and

10 the apparatus in the facility performs a processing or an operation in accordance with the information of the notification.

8. The facility-user-interface distributing system according to claim 1,

wherein the mobile terminal stores a terminal ID, or a medium in which the terminal ID is embedded is connected to or embedded in the mobile terminal, or the user has the medium in which the terminal ID is embedded,
20 and

the area determining unit detects the terminal ID ~~inside the area which is inside or is close to the movable predetermined area~~, and stores the detected terminal ID in a list.

25

9. The facility-user-interface distributing system according to claim 8,

wherein the terminal ID is stored in an RFID medium,

the system has an RFID reader device placed ~~in the area inside or close to the movable predetermined area~~,
30

the RFID reader device reads the terminal ID of the RFID medium ~~which enters/exits the area~~ inside or is

close to the movable predetermined area, and

the area determining unit determines whether or not
the mobile terminal exists ~~inside the area~~ inside or is
close to the movable predetermined area ~~or not~~ by using

5 the terminal ID read by the RFID reader device.

10. The facility-user-interface distributing system
according to claim 1,

wherein the mobile terminal has a positioning
10 function of acquiring positional information of the
mobile terminal by a GPS, and

the area determining unit acquires the positional
information from the mobile terminal, and determines
whether or not the mobile terminal exists ~~inside the area~~
15 inside or is close to the movable predetermined area ~~or~~
~~not~~ by using the positional information.

11. The facility-user-interface distributing system
according to claim 1,

20 wherein the managing unit sets a predetermined area
centering a predetermined apparatus inside the facility
so as to include periphery of the predetermined apparatus
as the ~~area~~ movable predetermined area.

25 12. The facility-user-interface distributing system
according to claim 1,

wherein, for information of a service request from
a first mobile terminal, if a plurality of mobile
terminals exist ~~inside the area~~ inside or is close to the
30 movable predetermined area, the service providing unit
transmits information of a response for the service
request to each program of the plurality of mobile

terminals, and ~~causing~~causes the user interface to output the information therefrom.

13. The facility-user-interface distributing system
5 according to claim 1,

wherein the managing unit manages two or more
movable areas as the movable area associated with the
facility, manages each program associated with each of
the movable areas, forms a user interface which is
10 different depending on each program, and sets a
destination of the notification which is different
depending on each program,

the area determining unit determines in which
movable area the mobile terminal exists, and

15 the distributing unit distributes a program in
accordance with the movable area, in which the mobile
terminal exists, to the mobile terminal.

14. The facility-user-interface distributing system
20 according to claim 1,

wherein the managing unit sets a plurality of
movable areas associated with a plurality of facilities,
respectively, manages each program associated with each
of the movable areas, forms a user interface which is
25 different depending on each program, and sets a
destination of the notification which is different
depending on each program,

the area determining unit determines in which
movable area of which facility the mobile terminal
30 exists,

the distributing unit distributes a program in
accordance with the movable area of the facility, in which

the mobile terminal exists, to the mobile terminal, and

the service providing unit is provided in each of
the plurality of facilities, receives information from
the program of the mobile terminal inside or close to the
5 movable area of the facility associated with the service
providing unit, and notifies the operator of the facility
or the apparatus in the facility of the information.

15. The facility-user-interface distributing system
10 according to claim 1,

wherein the distributing device is placed inside
the facility.

16. The facility-user-interface distributing system
15 according to claim 1,

wherein the distributing device is formed on a
communication network outside the facility.

17. The facility-user-interface distributing system
20 according to claim 1,

wherein the facility is a vehicle including a bus,
the operator of the facility is a crew of the
vehicle,

the user is a passenger of the vehicle,
25 the apparatus in the facility is an apparatus which
performs a processing related to getting on/off of the
vehicle, drive guiding thereof, or payment of a
transportation fee therefor and

the user interface formed by the program is a user
30 interface which enables an operation related to getting
on/off of the vehicle, drive guiding thereof, or payment
of a transportation fee thereof.

18. The facility-user-interface distributing system according to claim 1,

wherein the facility is a building including an
5 office building,

the user is a moving person inside the building,

the apparatus in the facility is an apparatus which
performs a processing related to movement in a place
including an elevator and a door inside the building or
10 guiding inside the building, and

the user interface formed by the program is a user interface which enables an operation related to movement in a place including an elevator and a door inside the building or guiding inside the building.

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19. The facility-user-interface distributing system according to claim 1,

wherein the facility is a shop where a product or a service is sold,

20 the operator of the facility is an operator or a shop clerk of the shop,

the user is a customer of the shop, and

the user interface formed by the program is a user interface which enables an operation related to calling
25 of the shop clerk of the shop, ordering of the product or the service, or payment of a fee of the product or the service.

20. The facility-user-interface distributing system
30 according to any one of the preceding claims, wherein the
movable predetermined area comprises any one or more of
an elevator, a door or an interior of a vehicle.

21. The facility-user-interface distributing system
according to according to any one of the preceding claims,
wherein the service providing unit notifies receipt of
5 the operation of the movable predetermined area to all
mobile terminals that exist inside or close to the movable
predetermined area.