

[DESCRIPTION]

[Title of Invention] INFORMATION DISPLAY APPARATUS AND
INFORMATION DISPLAY SYSTEM

[Technical Field]

[0001]

The present invention relates to an information display apparatus and an information display system. Particularly, it relates to an information display apparatus which can be installed inside an elevator car or at an elevator hall, and an information display system including the information display apparatus.

[Background Art]

[0002]

As an information display apparatus for providing information to users in a moving time spent inside an elevator car or a waiting time spent at an elevator hall, there is an apparatus which provides current floor position information of the running elevator, weather, news, etc. Since either the inside of the elevator car or the elevator hall is a space where an unspecified large number of users spend a short time, this type apparatus is requested to provide information efficiently. To this end, there has been known a technique disclosed in Japanese Patent No. 3941820, which technique is designed, for example, to divide the screen of an information display apparatus into a plurality of areas variably and display

information in the areas respectively.

[0003]

According to the technique, there is provided an information display control apparatus for providing information to an unspecified large number of persons, the apparatus including: an information display unit which includes a display for video output and a speaker for audio output; a setting file in which information data to be displayed in the information display unit are described or designated by file names; a storage unit which stores information data; and a main control unit which includes a file analysis portion for analyzing the setting file and setting the file names as internal data, reads necessary information data from the storage unit in accordance with the internal data and displays the read information data on the information display unit; wherein: the setting file includes a portion where divisions of a display area are described and designated by numerical values of coordinates; the file analysis portion analyzes the setting file and constructs internal data including the numerical values of coordinates; and the main control unit divides the display of the information display apparatus into a plurality of areas in accordance with the internal data so that different information data such as moving images, still images and text character images can be displayed in the different areas simultaneously.

[Citation List]

[Patent Literature]

[0004]

[Patent Literature 1] Japanese Patent No. 3941820

[Summary of Invention]

[Technical Problem]

[0005]

According to the aforementioned known technique, the divided areas of the screen can be changed over based on designated date and time so that information can be displayed on the divided areas of the screen. However, the technique is too poor in efficiency to efficiently provide information to an unspecified large number of users in a short time such as a moving time spent inside an elevator car or a waiting time spent at an elevator hall. For example, consider how long users ride on the elevator car for movement. In this case, the elevator ride time is short and at most a moving time between the lowest floor and the highest floor. In addition, generally, information one elevator user wants to know differs from information another elevator user wants to know. Accordingly, when the screen is changed over every fixed time interval, some elevator users may get off the elevator without viewing any useful information for the users at some changeover timing.

[0006]

Therefore, an object of the invention is to provide

information to an unspecified large number of users efficiently in a short time.

[Solution to Problem]

[0007]

In order to achieve the object, the invention provides an information display apparatus which is installed in at least one of an elevator car and an elevator hall and which displays information for elevator users, the apparatus including: an elevator information display area in which at least one of position indication and destination floor information of the elevator car is displayed; a contents changeover display area in which contents to be provided to the elevator users are changed over from one to another and displayed; and a contents constant display area in which contents to be provided to the elevator users are constantly displayed. Incidentally, other problems, configurations, and effects than the aforementioned ones can be made clear from description of the following embodiment.

[Advantageous Effects of Invention]

[0008]

According to the invention, it is possible to provide information to an unspecified large number of users efficiently in a short time.

[Brief Description of Drawings]

[0009]

[Fig. 1] A functional block diagram showing the overall configuration of an information display system including an information display apparatus according to an embodiment of the invention.

[Fig. 2] A view showing an example of the layout of a display screen of the information display apparatus in Fig. 1.

[Description of Embodiment]

[0010]

An embodiment of the invention will be described below with reference to the drawings.

[0011]

Fig. 1 is a functional block diagram showing the overall configuration of an information display system provided with an information display apparatus according to an embodiment of the invention. In Fig. 1, an information display system 100 according to the embodiment is fundamentally constituted by a client building 1, a public network 7, a remote monitoring center 8, and a contents distribution service 9.

[0012]

An elevator car 2, an information display control apparatus 4, an elevator control apparatus 5, a remote monitoring apparatus 6, etc. are installed in the client building 1. An information display apparatus 3 is attached to the inside of the elevator car 2 which can be stopped at

each floor inside the building. Incidentally, although not shown, the information display apparatus 3 is attached only not to the inside of the elevator car 2 but also to each elevator hall in the embodiment. The display contents of the information display apparatus 3 can be controlled by the information display control apparatus 4. The information display control apparatus 4 is connected to the remote monitoring apparatus 6. The remote monitoring apparatus 6 is connected to the elevator control apparatus 5 which controls operation (ascending/descending) control of the elevator. The remote monitoring apparatus 6 is further connected to the monitoring center 8 which monitors elevators all over the whole country, through the public network 7.

[0013]

The remote monitoring center 8 includes a reception processing apparatus 10, a data storage apparatus 11, a distribution processing apparatus 12, and a communication apparatus 13. The remote monitoring center 8 is connected to the various contents distribution service 9 through the reception processing apparatus 10 in order to distribute information to each information display apparatus 3.

[0014]

Contents such as weather forecasts or news distributed to the remote monitoring center 8 side from the contents distribution service 9 are acquired by the reception

processing apparatus 10. After the contents are stored in the data storage apparatus 11, distribution destinations and distribution details are selected by the distribution processing apparatus 12. The selected distribution destinations and the selected distribution details of the contents are distributed to the client building 1 as a distribution target through the communication apparatus 13 and the public network 7. The remote monitoring apparatus 6 of the client building 1 transmits the various contents received from the remote monitoring center 8 to the information display control apparatus 4. The information display control apparatus 4 performs display setting on the information display apparatus 3.

[0015]

At least each of the information display control apparatus 4, the elevator control apparatus 5, the remote monitoring apparatus 6, and the distribution processing apparatus has a CPU (Central Processing Unit) which reads any of programs stored in one memory (ROM: Read Only Memory), develops the read program on another memory (RAM: Random Access Memory) and executes processes defined by the program sequentially. Incidentally, although the processes will be mentioned as processes of the functional blocks shown in Fig. 1 in the following description, the CPU serving as hardware executes the processes.

[0016]

Fig. 2 is a view showing an example of the layout of a display screen of the information display apparatus 3 installed inside the elevator car 2 in Fig. 1. In Fig. 2, the display screen is divided into three areas. The divided areas are constituted by an elevator information display area 31, a contents changeover display area 32 and a contents constant display area 33 which are arranged in the named order from the top. Various contents such as news are changed over from one to another every fixed time interval and displayed in the contents changeover display area 32. The date and time and icons are displayed in the contents constant display area 33.

[0017]

Current position information or destination floor information etc. of the elevator car 2 acquired from the elevator control apparatus 5 through the remote monitoring apparatus 6 by the information display control apparatus 4 in Fig. 1 is displayed in the elevator information display area 31. In Fig. 2, the elevator information display area 31 indicates that the current position is the eighth floor, and the elevator is moving in the ascending direction and will next stop at the twenty-third floor. The elevator information display area 31 is an essential information display area when no other car position display apparatus is attached in the inside of the elevator car 2. The elevator information display

area 31 serves as an area always indicating elevator information.

[0018]

For example, weather forecasts or news etc. acquired from the contents distribution service 9 in Fig. 1 are displayed as contents provided to elevator users in the contents changeover display area 32. Display details in this area are changed over every fixed time interval. Display of various contents in this area is changed over every fixed time interval based on the order of priorities set in advance. Accordingly, in some cases, some users cannot view some of the contents. However, in the case of contents indicating character strings such as news or contents made up of illustrations or figures, the contents changeover display area 32 serves as a necessary area to display the contents to be recognized by the users.

[0019]

A current date and time 33a is displayed as information to be always cared about by the users in the contents constant display area 33. Further, information which can be recognized as an icon is displayed in the contents constant display area 33. When weather forecasts are displayed in the contents changeover display area 32, the display area is so large that highest and lowest temperatures and a precipitation percentage as well as figures indicating the weather such as sunny, rainy, etc. can be displayed. In addition, detailed information such

as weather forecasts for today and tomorrow can be displayed. However, not all users can view the information in a short elevator ride time. Therefore, in the embodiment, an icon 33b indicating the weather such as sunny or rainy is displayed in place of the aforementioned detailed information in the contents constant display area 33. In addition, the display contents of each icon can be updated individually. The latest information can be displayed with another updating frequency than those of other icons or areas.

[0020]

When the configuration is made thus, any passenger who has a short elevator ride time can check the weather forecasts simply and any passenger who has a relatively long elevator ride time can view not only the weather forecasts but also the detailed information.

[0021]

In the embodiment, the contents constant display area 33 is designed to include a reservation area where information displayed as an icon is not limited to the weather forecasts but a plurality of icons can be set to be displayed or not to be displayed. In this manner, when, for example, various event information is displayed in the contents changeover display area 32, the number of events can be displayed as an event number 33c in the contents constant display area 33. Alternatively, a power saving icon 33d may be displayed during regenerative

running in order to appeal elevator performance. In this manner, icons can be displayed in conjunction with the contents. Accordingly, information can be transmitted effectively to a larger number of users.

[0022]

As described above, according to the embodiment, the following effects can be obtained. Incidentally, in the following description of the effects in the embodiment, constituent elements in the claims are enclosed in parentheses and attached to parts in the embodiment respectively or reference numerals are attached thereto, so that the corresponding relation between the both can be made obvious.

[0023]

(1) An information display apparatus 3 is installed in at least one of an elevator car 2 and an elevator hall and displays information for elevator users. The information display apparatus 3 includes: an elevator information display area 31 in which at least one of position indication and destination floor information of the elevator car 2 is displayed; a contents changeover display area 32 in which contents to be provided to the elevator users are changed over from one to another and displayed; and a contents constant display area 33 in which contents to be provided to the elevator users are constantly displayed. Accordingly, information can be provided efficiently to an unspecified large number of users in a short

time. More specifically, information can be provided constantly also in the information display apparatus 3 whose display screen size is small enough to be installed inside the elevator car 2. Information assumed to be necessary to a lot of users can be provided even in a short time.

[0024]

(2) The contents are changed over from one to another every fixed time interval and displayed in the contents changeover display area 32. Accordingly, various contents can be changed over from one to another and displayed in the order of priorities set in advance. Therefore, in some cases, some users cannot view some of the contents. However, in the case of contents indicating character strings such as news or contents made up of illustrations or figures, the users can recognize that information as long as the users have a chance to view it.

[0025]

(3) At least one of date and time information 33a and a content which can be recognized as an icon 33b is constantly displayed in the contents constant display area 33. Accordingly, necessary date and time information 33a or weather information etc. indicated by the icon 33b can be simply checked even in a short elevator ride time. In addition thereto, any passenger who has a relatively long elevator ride time can also view detailed information such as the number of

events (even number 33c) of various event information or a power saving icon 33d displayed during regenerative running in order to appeal elevator performance.

[0026]

(4) Contents to be displayed in the contents constant display area 33 can be updated individually and displayed if occasion demands. Accordingly, latest information can be displayed with another updating frequency than those of other icons or areas.

[0027]

(5) An information display system 100 includes: a client building 1 which includes the information display apparatus 3; a remote monitoring center 8 which is connected to a remote monitoring apparatus 6 of the client building 1 through a public network 7; and a contents distribution service 9 which distributes contents to the remote monitoring center 8. According to the information display system 100, various contents distributed to the remote monitoring center 8 from the contents distribution service 9 are selected by the remote monitoring center 8 and distributed to the remote monitoring apparatus 6 of the client building 1, and the contents distributed by the information display control apparatus 4 are displayed on the information display apparatus. Accordingly, information shown in the paragraphs (1) to (4) can be provided to passengers inside an elevator car 2 or to users at an elevator

hall.

[0028]

Incidentally, the invention is not limited to the aforementioned embodiment but may be modified variously without departing from the spirit and scope of the invention. All the technical items included in the technical ideas stated in the claims are aimed at by the invention. Although a preferable example has been shown in the embodiment, various alternatives, revisions, modifications or improvements can be attained by those skilled in the art from the contents disclosed in the description of the invention and should be included in the technical scope stated in the accompanying claims.

[Reference Signs List]

[0029]

- 1 client building
- 2 elevator car
- 3 information display apparatus
 - 31 elevator information display area
 - 32 contents changeover display area
 - 33 contents constant display area
 - 33a date and time information
 - 33b icon
 - 33c event number
 - 33d power saving icon
- 4 information display control apparatus

- 5 elevator control apparatus
- 6 remote monitoring apparatus
- 7 public network
- 8 remote monitoring center
- 9 contents distribution service
- 100 information display system

[CLAIMS]

[Claim 1]

An information display apparatus which is installed in at least one of an elevator car and an elevator hall and which displays information for elevator users, the apparatus comprising:

an elevator information display area in which at least one of position indication and destination floor information of the elevator car is displayed;

a contents changeover display area in which contents to be provided to the elevator users are changed over from one to another and displayed; and

a contents constant display area in which contents to be provided to the elevator users are constantly displayed.

[Claim 2]

An information display apparatus according to Claim 1, wherein:

the contents are changed over from one to another every fixed time interval and displayed in the contents changeover display area.

[Claim 3]

An information display apparatus according to Claim 1 or 2, wherein:

at least one of date and time information and a content which can be recognized as an icon is displayed in the contents

constant display area.

[Claim 4]

An information display apparatus according to any of Claims 1 through 3, wherein:

contents to be displayed in the contents constant display area can be updated individually and displayed if occasion demands.

[Claim 5]

An information display system comprising:

a client building including an information display apparatus according to any of Claims 1 through 4;

a remote monitoring center which is connected to a remote monitoring apparatus of the client building through a public network; and

a contents distribution service which distributes contents to the remote monitoring center.