

Elevator System Having Destination Call Control

Elevator system having destination call control and having a device for displaying video data in the region of an elevator system, and to a method for operating an elevator system having destination
5 call control.

The present innovation relates to an elevator system with a control device by means of which the elevator system is operable according to the control concept known as destination call control or destination selection control. In this control concept, each elevator passenger communicates his/her
10 destination floor to the control device before entering an elevator cabin by means of a destination input device assigned to his/her boarding floor. Immediately after having entered his/her destination, the control device provides each elevator passenger with instructions about which elevator of an elevator group to wait in front of which can reach at least his/her destination floor with an optimized ride time. In short, this is referred to as an elevator system having destination call control.
15 Specifically, the innovation relates to an elevator system having destination call control and having a device for displaying video data in the region of an elevator system, and furthermore to a method for operating an elevator system having destination call control having such a display device.

A device for displaying video data in the region of an elevator system (display device) is generally
20 known from EP 1 069 065 A. By means of the display device found there, an image is projected to an elevator door, i.e., a shaft door of the elevator door, which serves as a projection surface. The projection is performed by means of a projector mounted to the ceiling above the shaft door.

An object of the present invention is to provide an elevator system and device comprised therein
25 for displaying image information in the region of the elevator system (display device), in which the display device offers additional functions, in particular a function by means of which a blinding of people can be avoided and is easy to install.

This object is achieved by means of an elevator system having destination call control with a device referred to in short as the display device to display image information in the region of the elevator system having the features of claim 1. Advantageous embodiments of the solution proposed
30 here are the subject of the dependent claims. Dependencies used therein point to further development of the subject matter of the main claim through the features of the particular dependent claims and are not to be understood as a waiver of obtaining independent, objective protection for the combinations of features of the dependent claims. Furthermore, with a view to an interpretation of
35 the claims in a closer specification of a feature in a subordinate claim, it should be assumed that such a restriction does not exist in the respective preceding claims.

To achieve the object mentioned above, the following is provided in an elevator system having destination call control as well as a corresponding method for operating such an elevator system: The elevator system comprises or the elevator system includes a display system. The display system comprises at least one display device functioning as a device for displaying video data in the region of the elevator system. The, or every, display device is intended and configured for displaying image information in the form of a projection in the region of the elevator system. A special feature of the elevator system is that a respective projection of the at least one display device can be influenced by means of a selection of a destination floor taking place in the context of the destination call control. During the operation of the elevator system, this projection is influenced or determined by the respectively selected destination floor.

The advantage of the proposed solution is that waiting users of the elevator system receive potentially interesting information that depends on the destination floors currently selected on the boarding floor by means of the video data displayed as a projection, for example information about the companies on the destination floors and/or goods and services available there. According to the invention, the projection in the region of the elevator system is displayed on the outside of the shaft doors of an elevator and, alternatively or additionally, on the inside of an elevator cabin or any other suitable projection area.

In one embodiment of such an elevator system and accordingly in one corresponding embodiment of a method for operating such an elevator system, a video data memory is associated with the display system, wherein the video data is assigned to a floor identifier and wherein a respective projection of the at least one display device that can or is influenced or determined by means of a selection of a destination floor that takes place in the context of the destination call control in that video data can or is output as a projection that, according to its floor identifier, matches the respective destination floor. The designation of the video data available for display with a floor identifier and a selection of video data to be displayed on the basis of a comparison of the floor identifiers with a date encoding the selected destination floor is a particularly easy and efficient way to implement the output of video data depending on the respectively selected destination floor.

It is optionally provided in a display device functioning as a device for displaying video data in the region of an elevator system or an elevator system with such a display device that it processes a sensor signal obtainable from a sensor, whereby, due to the sensor signal, the visible projection of the respective video data is interrupted. Preferably, such a sensor detects situations in which persons can be blinded by the visible projection, for example when persons move into the region between the projector and the projection surface. The interruption of the visible projection of the video data that would be output otherwise takes place in the form of an output of a black image by means of the display device instead of the video data that would be output otherwise. The use of a black image to interrupt the projection has the advantage that no interference with the functionality

of the display device is necessary for such an interruption of the projection. By means of the display device, such video data is output that is supplied to the display device or a beam source comprised by it. It is irrelevant for the function of the display device whether video data that leads to a visible projection or whether video data of a black image, which does not result in a visible projection, is supplied to the display device or the beam source. Therefore, neither a control of a mechanism such as a flap covering the beam source nor a control of the beam source such as a control that temporarily disables the beam source is required for interrupting the visible projection. The interruption of a visible projection by means of a black image can also be used independent from an elevator system having destination call control, for example in an elevator using other control concepts.

In a further embodiment of the elevator system, the sensor is assigned to an elevator door wing, i.e., a shaft door wing or a cabin door wing. This placement of the sensor causes a sensor signal obtainable from the sensor to encode information about whether the elevator door wings are closed.

When the display device is located outside the elevator cabin and projects the respective video data on the shaft doors, users of the elevator system can only be blinded if they are inside an elevator cabin and only between the time the elevator door wings open until they are completely closed again. A sensor signal that encodes whether the elevator door wings are closed can therefore be used directly to control the display device, which causes an interruption of a visible projection. The same applies accordingly to a display device located on the inside of an elevator cabin that projects onto the cabin doors. Users waiting for the elevator cabin in front of the shaft doors might be blinded. Here as well, a sensor signal which encodes whether the elevator door wings are closed can be used to interrupt the visible projection.

Possible sensors to be considered are a contactless sensor, in particular an optical sensor, a contactless inductive sensor, a contactless capacitive sensor, a reed switch, or the like. A contactless sensor is low maintenance and easy to retrofit.

In another embodiment of the display system or the display device, the sensor is placed inside an elevator shaft of the elevator system and there pointed to an elevator door wing, namely a shaft door wing or a cabin door wing. When mounted in such a way, the sensor is invisible to users of the elevator system so that, for example, no improper interference with the sensor is possible.

With regard to an integration of the solution proposed here in an already existing elevator system, it is optionally provided that the sensor is designed in the manner that it is independent from an elevator system control intended to control and monitor the elevator system, i.e., that it is not part of the elevator system control, so that such a display device and its sensor can be easily retrofitted in an elevator system already in operation.

In one embodiment of the display system and the display device or an elevator system with such a display system, at least one display device can be influenced by means of a smartphone or the like. The display device can receive signals from a smartphone located in the reception range which
5 influence and, in particular, determine the video data displayed by means of the display device. In a special embodiment, the display device can transmit data about the video data available for display to a smartphone located in the reception range so that a user of the smartphone can make a specific selection.

10 In a further embodiment of the elevator system, at least two elevators of an elevator group on one of the floors are assigned to one display device each. Here, each of the display devices displays relevant information for those destination floors that the elevator to which the display device is assigned will reach after having departed said floor. Preferably, the information relevant for one of the destination floors to be reached is displayed sequentially in time.

15 In a further embodiment of the elevator system, at least two elevators of an elevator group on one of the floors are assigned to one display device each. Each of the display devices projects information that is relevant to the passengers in the elevator to the shaft door leaf of the elevator to which it is assigned. Such information may, for example, be the display of the identifier assigned to
20 said elevator and/or the destination floor currently scheduled for said elevator and/or the institutions located on these destination floors and/or the expected wait time until departure. By projecting the information on the shaft door leaves, the information relevant to the elevator passengers can be displayed in a large format and is visible from afar.

25 Below, we will explain in greater detail one embodiment of the invention with the help of drawings. Matters or elements that correspond to one another are provided with the same reference signs in all of the drawings.

The embodiment is not to be understood as limiting the solution proposed here. Rather, modifica-
30 tions are also possible within the scope of the present disclosure, in particular those which can be inferred by a person skilled in the art with respect to solving the problem, for example, by combining or modifying individual features, elements, or method steps described in connection with the general or specific description part and contained in the claims and/or the drawings, and lead to a new subject matter or new method steps or method step sequences through combinable features.

35 In the drawings,

Fig. 1 shows an elevator system with individual display devices assigned to the elevator system,

Fig. 2 shows an elevator system with a terminal of a destination call control,

Fig. 3 shows one of the display devices according to Fig. 1 with further details,

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Fig. 4 shows an illustration of a smartphone that can influence the information output by a display device, and

Fig. 5 shows another illustration of one of the display devices according to Fig. 1 with additional details.

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The illustration in Figure 1 shows in a schematically simplified way an elevator system 10 with an elevator cabin 14, comprising elevator door wings 16, i.e., shaft door wings 16.1 and cabin door wings 16.2, which can be moved in an elevator shaft 12 between different floors of a building in the usual manner.

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In a building with an elevator system 10, a display system 18 with display devices 20 is often installed in the region of the respective elevator system 10 with which, using underlying video data 22, i.e., static video data 22 (images) or dynamic video data 22 (image sequences, films), certain visual information is provided to building and elevator users. Such information may be, for example, safety instructions, directions, advertising, images, or entertainment. Advantageously, the elevator door wings 16 of the elevator system 10, i.e., the shaft door wings 16.1 or the cabin door wings 16.2, can be used as a projection surface for such text and image information.

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The display system 18 comprises at least one display device 20 with one projector 24 which displays the information available in the form of video data 22. In a preferred embodiment of the display devices 20, the projectors 24 are installed in housings 26 made from plastic or metal to protect them from dirt and mechanical damage.

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The display system 18 furthermore comprises at least one computer 28 as well as video data memory 30 comprised by the computer 28 or assigned to the computer 28. On it, the video data 22 that the displayable information or a plurality of displayable information is based on is stored in the usual way, and from there this information is transmitted to the display device 20 which projects the information in the form of static or movable images on the projection areas formed by the elevator door wings 16. The information displayable with the display device 20 is information whose video data 22 was already transmitted to the respective display device 20 by means of a computer 28, or such information whose video data 22 is available on the computer 28 or a computer 28 for transmission to the display device 20. The preferred projectors 24 to be used are network-enabled projectors 24 which are controlled by at least one computer 28 via a cable network 32 or a wireless

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network and which are provided with the video data 22 for the visual information to be displayed. Each display device 20 or its projector 24 comprises a control device 34 that is active in this regard at least for receiving video data 22 and for displaying visual information based on video data 22. The video data 22 is temporarily stored for example in a memory 36 (Fig. 5) comprised by the control device 34 or at least reachable for the control device 34.

To generate the visual information displayed by the or every display device 20, projectors 24 are used which process the video data 22 and which can be arranged outside the elevator shafts 12 in the region of the shaft door wings/floor doors 16.1 or inside the elevator cabins 14 of the respective elevator system 10. The projectors 24 are preferably mounted above the elevator door wings 16 so that they can project the visual information on the elevator door wings in a direction that is slanted downward from the horizontal plane (projection 38). In a special embodiment of the method described here, at least the sections of the elevator door wings 16 that are captured by the projection 38 are covered, and in particular laminated, with a projection film.

The illustration in Figure 2 schematically shows in a very simplified manner an elevator system 10 with here three elevators, a corresponding number of elevator cabins 14 that are not visible here (Fig. 1) and also a corresponding number of elevator door wings 16 on every floor, whereby the shaft door wings 16.1 are shown in Figure 2 in accordance with the respective viewing direction. A display device 20 is located above the shaft door wing 16.1 of every elevator. Every display device 20 is oriented in such a way that its projection 38 falls on the respective shaft door wings 16.1.

The elevator system 10 is an elevator system having destination call control. For illustration purposes, a terminal 40 is shown where a user of the elevator system 10 enters a ride request. This is done in the usual way by a manual selection of a destination floor on a destination input device outside of the elevator cabin. Alternatively, the selection of the destination floor may be made automatically or semi-automatically as well on the basis of certain floor authorizations which are, for example, stored on a machine-readable access card and can be read by a destination input device provided for this purpose. As soon as a not displayed elevator system control of the elevator system 10 has selected an elevator to fulfill the request, this is displayed, for example, on the display device 20 associated with the elevator door wings 16 of the respective elevator. The user of the elevator system can then step in front of the respective shaft door wings 16.1 and enter the elevator cabin 14 as soon as the elevator door wings 16 open. During the wait time prior to the opening of the elevator door wings 16, the display device 20 in the waiting area outside of the elevator cabin displays video data 22 that pertains to the selected destination floor.

The rest of the description relates to the use of the display system 18 and the display devices 20 in an elevator system 10 with destination call control for such an elevator system 10 that are the main

focus here. In general, the use of the display system 18 and the display devices 20 are conceivable for any type of elevator system 10. This is the case because the display devices 20 and the display system 18 as a whole are, in fact, associated with the respective elevator system 10 such that a projection 38 of the respectively displayed information on the elevator door wings 16 or in the area of the elevator door wings 16 takes place, but that the display devices 20 can otherwise be configured completely independent from the respective elevator system 10 and its elevator system control.

If used for an elevator system 10 with destination call control and a display of video data 22 which pertain to a respectively selected destination floor, the video data 22 in a video data memory 30 are provided with a floor identifier 42. This permits the computer 28 a comparison between a date received from the elevator system control and the respectively selected destination floor with the floor identifier 42 of the video data 22 available in the video data memory 30. If, based on such a comparison, video data 22 is found that matches the selected destination floor, this data is transmitted to one of the display devices 20 of the display system 18. The display device 20 is one of the display devices 20 on the floor in which the selection of the destination floor was made and is, from the group of these display devices 20, the display device 20 that is associated with the elevator door wings 16 of the elevator with which the ride request is performed.

The display of video data 22 described thus far takes place on the floor on which the user of the elevator system 10 begins his/her ride in an elevator cabin 14. In addition, and on the same basis, video data 22 matching the destination floor can be displayed by means of the display system 18 and one or more display devices 20 in the elevator cabin 14 and/or on the destination floor.

For explanatory purposes, the illustration in Figure 3 shows another option to influence or determine the video data 22 displayed by means of at least one display device 20 with one of the display devices 20 according to Figure 1 and a user carrying a portable mobile radio device, in particular a mobile radio device in the form of a so-called smartphone 44. From a computer 28 acting as a server, several projectors 24 arranged across one or more buildings can be operated via the network in such a way that they simultaneously project the same or also different visual information on the elevator door wings 16. By means of a computer program installed on a smartphone 44, for example in the form of a so-called app 46 (Fig. 4), building and/or elevator users can influence one or more display devices 20 such that a desired category of information is played.

To this purpose, every display device 20 comprises a receiver 48 for a signal 50 emitted by a smartphone 44, in particular a signal 50 in the form of an NFC signal (Near Field Communication), a ZigBee signal, or a Bluetooth signal, etc. The receiver 48 is a receiver 48 intended for the reception of such a signal 50, i.e., in particular a receiver 48 that can receive NFC, ZigBee, or Bluetooth signals, or generally a receiver 48 that can also otherwise be used for example in a so-called Wire-

less Personal Area Network (WPAN). According to the functionality of the app 46 running on the smartphone 44, the signal 50 is emitted and encodes information selected by the user of the smartphone 44 to be displayed by means of the respective display device 20. The signal 50 is processed by the display device 20, in particular its control device 34. The processing occurs either
5 directly via the display device 20 or in the form of a transmission of the signal 50 to the computer 28 so that the further processing of the signal 50 occurs there. The result of the processing of the signal 50 is that the display device 20 displays video data 22 that matches the signal 50. If said data is already present in a memory of the display device 20, the emission can take place immediately. Otherwise, upon having received signals 50 forwarded by the display device 20, the computer 28
10 transmits video data 22 that matches the signal 50 to the display device 20, which then ultimately displays the data. In any case, a comparison is made between a date transmitted by the signal 50 and a date 52, which categorizes available information or the underlying video data 22. As soon as a match or a sufficient match is found - by the display device 20, in particular its control device 34, or respectively by the computer 28 - the video data 22 can be displayed by the display device 20 or
15 the respective video data 22 can be transmitted to the display device 20 and then displayed. The identification of the video data 22 with a date 52 encoding a video category is, in addition to the floor identifier 42 (Fig. 1), a further identification of the video data 22. In Figure 3, only the date 52 encoding the video data category is shown symbolically.

20 In a special embodiment, the display device 20 has a transmitter 54 in addition to a receiver 48 of the type described above. By means of the transmitter 54, signals 56 receivable by a smartphone 44 are emitted in a direct service area of the display device 20 which encode the information that can be displayed by the display device 20. The transmitter 54 is, for example, a transmitter 54 that is capable of transmitting NFC, ZigBee, or Bluetooth signals, etc., and generally a transmitter 54 as it
25 is otherwise used for example in a so-called Wireless Personal Area Network (WPAN). This type of transmitter 54 and the already mentioned receiver 48 are advantageously combined in a transmitter/receiver unit.

By means of the transmitter 54 of the transmitting portion of the transmitter/receiver unit - herein-
30 after jointly referred to as the transmitter 54 - a smartphone 44 located in the service area of the transmitter 54 and having a respective app 46 receives a list 58 (Fig. 4) of available information. From this list 58 or a comparable display of available information, the user of the respective smartphone 44 can select the information, and based on the selection, the smartphone 44 transmits a signal 50 that encodes the selection to the receiver 48 of the display device 20 or the receiving
35 portion of the transmitter/receiver unit - hereinafter jointly referred to as the receiver 48. Upon receipt of the signal 50, the selected information is displayed by means of the display device 20 or, first, the selected information is requested from the computer 28, the video data 22 relating to the

selected information transmitted from the computer 28 to the display device 20, and, finally, the selected information is displayed by means of the display device 20.

5 The illustration in Figure 4 shows in this regard in a schematically simplified manner a smartphone 44 with a screen 60 displaying a list 58 with available information. In a memory 62, the already mentioned app 46 is stored which determines the functionality of the smartphone 44 in connection with the control of one or more display devices 20.

10 The list 58 does not have to be based on currently received signals 56. In the same manner or additionally, there is the possibility that the app 46 provides for certain predetermined information categories, for example "safety instructions," "signs," "weather," "stock exchange," "news," etc., and that here the user of the smartphone 44 can make a selection. Based on such a selection, the smartphone 44 sends a signal 50 that is received by a display device 20 located in the signal range of the signal 50. There or - upon having internally forwarded the signal 50 to the or a computer 28 -
15 on the computer 28, information matching the signal 50 or respective, suitable video data 22 is selected and displayed by means of the display device 20 or transmitted to the display device 20 and then displayed. It should be mentioned in this regard that the information available in the network for a display device 20 does not have to be based on static video data 22. In the same way, the video data 22 may be dynamic video data 22 that is generated for example by means of data that
20 the computer 28 can retrieve from the Internet such as stock exchange data, weather data, or the like.

The described selection is generally made by the staff of the operator of the elevator system 10. A staff member, for example an employee of a department store, goes to a floor serviced by the elevator system 10 and the display device 20 located there and uses a smartphone 44 provided with a
25 suitable app 46 to select the information to be displayed by means of the display device 20. By making a selection from the smartphone 44, information that is appropriate for example for the respective floor can be selected. Only in an exemplary fashion and in the interest of explaining this aspect as simply as possible, it should be assumed that the elevator system 10 is located in a department store and that the different floors that can be reached from the elevator system 10 offer
30 different categories of goods, for example sporting goods on one of the top floors, men's clothing on the floor below it, women's clothing on the floor below that, household goods on the ground level, and groceries on an underground level. Then, by means of the smartphone 44 and the app 46, advertising for a particular sporting good or several particular sporting goods, a reference to special
35 offers in the sporting goods segment, or the like can be selected as the information to be provided by the display device 20 for the floor on which the sporting goods are offered. The same applies in this example accordingly to the other floors of the department store. The manner in which the information is displayed may be determined as well by the type of the video data 22 or the manner in

which it is provided. The video data 22 can, for example, be provided as a continuous or cyclically repeated video data stream (in the memory of the display device 20 or by the or a computer 28). In the same way, the control device 34 can perform a random selection of video data 22 already located in the memory of the display device 20, or the computer 28 can perform a random selection of video data 22 transmitted to the display device 20 - each time within a category that matches the respective selection. Additionally or alternatively, a time-based selection of video data 22 can be made also by means of the control device 34 or the computer 28.

An allocation of a particular floor identifier 42 to individual video data 22 can, in principle, be performed according to the same principle. Because the respective display device 10 displays video data 22 to the user of the elevator system 10 during the wait for the elevator cabin 14 that is based on the floor identifier 42 and a respectively selected destination floor, the video data 22 may be video data 22 that illustrates the different categories offered by a department store. The individual video data 22 is accordingly provided with a floor identifier 42, depending on which information the video data 22 contains and on which floor goods are offered in accordance with the information received. If there are several service providers, for example, on a floor of a bigger building, these may store video data 22 with a respective floor identifier 42 in the video data memory 30 or have it stored. In the case of a plurality of video data 22 with an identical floor identifier 42, such video data 22 can be displayed cyclically. It is possible to that a company or the like that provides video data 22 in this way to be displayed by means of the display system 18 basically books a length of time during which this data is displayed and/or whose position is booked in a group of video data 22 with the same floor identifier 42.

To avoid the projectors 24 oriented toward the elevator door wings 16 from beaming at elevator users, which would thereby be blinded or frightened, the control device 34 causes an interruption of the projection 38 on the elevator door wings 16. This can be caused by a mechanical shutter or the like which is moved into the path of the projection light beams and therefore interrupts these. In the same way, i.e., additionally or alternatively, it is possible to provide that an emission of projection light beams 38 by the control device 34 is stopped by a respective control of the projector 24 to interrupt the projection 38.

In this regard, Figure 5 shows a detailed view of the projector 24 identified in Figure 1 as IV. The housing 26 that generally surrounds the projector 24 is not shown. Instead, a beam source 64 is shown in addition to the illustration in Figure 1 which is comprised of the projector 24 and which can be controlled by means of the control device 34 during the operation of the projector 24. The control is performed in the embodiment proposed here by means of a video signal, in particular an HDMI signal, which is transmitted by means of a video cable, in particular an HDMI cable 66, from the control device 34 to the beam source 64. In the case of HDMI signals generated as video

signals, the HDMI signals generated by the control device 34 correspond to the high definition multimedia interface standard and the pin assignment of the HDMI cable 66 corresponds to the pin assignment provided by this standard.

5 The interruption of the projection 38 to avoid the elevator users from being blinded is caused by switching the beam source 64 to "black." To this purpose, an image generated by means of the control device 34 of the display device 20 stored in a memory 36 accessible to the control device 34 has, exclusively or at least substantially, image points with a color value of "black" or a color value at least in the vicinity of "black." This image is hereinafter referred to in short as black image 68, and the black image 68 is displayed instead of the otherwise displayed video data 22 to interrupt the visible projection 38 and to prevent the elevator users from being blinded. To this purpose, a video signal encoding the black image 68, especially an HDMI signal, is transmitted in a manner that is generally known by means of a video cable, in particular the HDMI cable 66 that functions as a video cable. The interruption of the visible projection 38 in accordance with the method described herein is therefore not an absolute interruption of the projection 38, but rather an interruption of a projection 38 as far as it comprises the emission of visible light beams by means of the beam source 64. When the black image 68 is issued, there are no visible light beams, and therefore people cannot be blinded.

The interruption of the visible projection 38 by means of a black image 68 is performed on the basis of a sensor signal obtainable from a sensor 70. The black image 68 is emitted at least until a respective sensor signal is sent by the sensor 70. The sensor is assigned to at least one of the cabin door wings 16.2 when a projector 24 is placed in an elevator cabin 14. When a projector 24 is placed outside of the elevator shaft 12, the sensor 70 is assigned to at least one of the shaft door wings 16.1 of the floor where the projector 24 is located. This latter situation is shown in the illustration in Figure 1. By means of a sensor 70 or by means of a sensor system comprising at least one sensor 70, a closed state of the respective elevator door wing 16, i.e., the shaft door wing 16.1 and/or the cabin door wing 16.2, is recorded when the display device 20 is in operation.

The sensor signal is processed by means of the control device 34 and the encoded closed state analyzed. As soon as the closed state is no longer present and the control device 34 receives a respective sensor signal from the sensor 70, the control device 34 causes the interruption of the visible projection 38 described above.

The sensor signal is generated by means of a sensor 70 and analyzed by means of the control device 34 of a display device 20 independently from the operation of a respective elevator system control. Even though generally there is the option of course to obtain the sensor signal processed by the control device 34 from a sensor that belongs to the elevator system control (not shown), a sensor 70 that is independent from the elevator system control has the advantage that no intervention

in the elevator system control is necessary when installing the display devices 20. This is a significant advantage, especially for already existing elevator systems 10.

In conclusion, the innovation proposed here can be briefly described as follows: The invention
5 relates to an elevator system 10 having destination call control and a display system 18 having at
least one device 20 for displaying video data in the form of a projection 38 in the region of the ele-
vator system 10, and a method for operating the same, whereby a respective projection 38 of the at
least one device 20 can be influenced by means of selection of a destination floor made as part of
the destination call control and is influenced/predefined during an execution of the method. The
10 description to be submitted here must be interpreted to mean as well that a certain type of elevator
system 10, its device 20 for displaying video data in the form of a projection 38 in the region of an
elevator system 10 (display device 20), which is independent from the elevator control principle, as
well as a method for its operation are provided whereby, by means of the device 20, a signal for the
interruption of the visible projection 38 available from a sensor 70 can be analyzed and whereby
15 the device 20 can be and is switched to the emission of a black image 68 when in operation to inter-
rupt the visible projection 38.

Claims

1. Elevator installation, comprising:
a destination call control system arranged for transmitting selection of a destination floor to an elevator control device before an elevator cabin is boarded; and
a display system comprising at least one display device arranged for displaying pictorial information in the form of a projection in a vicinity of the elevator installation, wherein the destination call control system is operative on the display system in that pictorial information selected for projection is influenced by the selection of the destination floor performed by the destination call control system, wherein the display device is arranged to evaluate a signal provided by a sensor and based on the evaluation selectively interrupt the visible projection, and wherein the display device is arranged for switching to emission of a black image in effecting interruption of the visible projection.
2. Elevator installation according to claim 1, further comprising a video data memory with various video data, associated with the display system, wherein a floor identifier is respectively assigned to each of the various video data, and wherein the destination call control system is operative on the display system in that the pictorial information projected is that associated with that one of the various video data whose floor identifier matches the destination floor selected by the destination call control system.
3. Elevator installation according to claim 1 or 2, wherein the black image comprises exclusively pixels with a color value corresponding to the color black.
4. Elevator installation according to claim 1, 2 or 3, wherein the display device comprises a light beam source, a control device and a memory, wherein the black image is stored in the memory, and wherein the switching of the display device to emission of the black image is effected through and by the control device forwarding of video signals resulting from the black image to the beam source.
5. Elevator installation according to any one of claims 1 to 4, wherein the sensor is assigned to an elevator door wing, namely a shaft door wing or a cabin door wing.
6. Elevator installation according to claim 5, wherein the sensor is selected from the group consisting of a contactless sensor, an optical sensor, a contactless inductive sensor, a contactless capacitive sensor and a reed switch.

7. Elevator installation according to claim 5 or 6, wherein the sensor is placed inside an elevator shaft of the elevator installation and is pointed there towards an elevator door wing, namely a shaft door wing or a cabin door wing.

5 8. Method for operating an elevator installation according to any of claims 1 to 7, including the step of projecting the pictorial information determined by the selection of a destination floor performed by the destination call control system, and interrupting the visible display of the pictorial information by switching the display device to emission of the black image in response to evaluation of the signal provided by the sensor indicating the presence of a person in a region between the
10 display device and a surface on which the pictorial information is projected .

9. Method for operating an elevator installation according to claim 2, including projecting the pictorial information that is associated with that one of the various video data whose floor identifier matches the destination floor selected by the destination call control system.

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10. Method according to claim 8 or 9, wherein the switching of the display device to an emission of the black image stored in a memory of the display device takes place in that a control device of the display device makes a switch that results in a forwarding of video signals resulting from the black image to a beam source of the display device.

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