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(54) **ENTITY AND METHOD FOR CONTROLLING A STATUS INDICATOR ASSOCIATED WITH AN EMERGENCY LIGHTING MEANS DRIVER**

(57) The present invention provides an entity for controlling a status indicator, wherein the status indicator is associated with an emergency lighting means driver. Optionally the emergency lighting means driver is an emergency light emitting diode driver (emergency LED driver). The status indicator comprises a light source. The light source is optionally a light emitting diode (LED). The entity is configured to control the status indicator such that, during a first time period directly before a test of the emergency lighting means driver is performed, the light source flashes during a second time period, wherein the second time period occurs at regular time intervals. The present invention further relates to a method for controlling the status indicator, a computer program and a computer-readable medium.

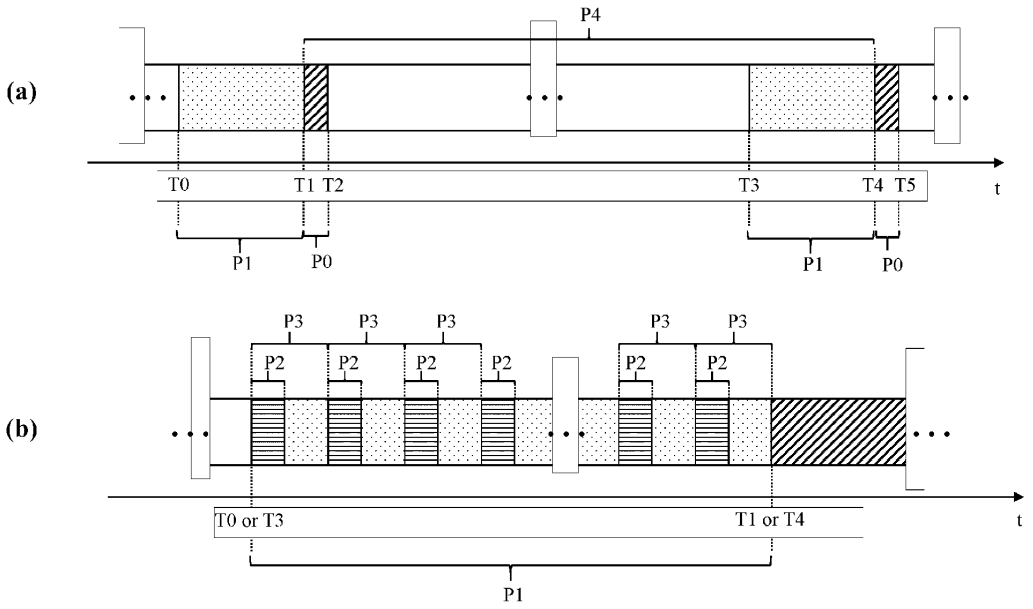

Figure 2

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Description

[0001] The present invention relates to an entity and a method for controlling a status indicator associated with an emergency lighting means driver, an emergency lighting system comprising such an entity, and a method for operating a status indicator associated with an emergency lighting means driver. The present invention further relates to a computer program and a computer-readable medium.

[0002] An emergency lighting system allows to provide lighting to an area in a situation in which the normal lighting of the area malfunctions or does not work due to an insufficient or failed electrical power supply e.g. from mains. The aforementioned situation may be referred to as "emergency situation". For this situation, the emergency lighting system may comprise one or more batteries that allow providing electrical power to the emergency lighting system so that lighting means (e.g. emergency lighting means) of the emergency lighting system may be electrically powered to provide emergency lighting. The concept of emergency lighting is well known in the field of lighting so that a more detailed description of emergency lighting is omitted and in the following mainly the features of emergency lighting that are relevant for the present invention are described.

[0003] For driving lighting means for emergency lighting an emergency lighting means driver may be used. Under the term "emergency lighting means driver" a driver for lighting means may be understood, which is configured to drive lighting means for providing an emergency lighting. That is, the emergency lighting means driver may be a driver that is configured to drive lighting means for providing emergency lighting or a driver that may drive lighting means for providing normal lighting and emergency lighting. In order to be electrically powered independent of mains the emergency lighting means driver may be connected to and/or may comprise one or more batteries. The one or more batteries may be electrically charged during a normal situation, in which the normal electrical supply (e.g. from mains) functions. For example, the emergency lighting means driver may electrically charge the one or more batteries.

[0004] In order for the emergency lighting means driver to function in the situation, in which the normal lighting of the area malfunctions or does not work, tests of the emergency lighting means driver may be performed. The terms "perform" and "carry out" may be used as synonyms. One test is a duration test of the emergency lighting means driver. Another test is a function test of the emergency lighting means driver. The duration test and function test are tests well known in the field of emergency lighting and, thus, are not described further.

[0005] For a person to know whether an emergency lighting means driver is properly working (thus ready to function during the emergency situation), has passed a test (performed at last), malfunctions or has failed the test a status indicator may be associated to the emergency lighting means driver. The emergency lighting means driver may comprise or be electrically connected to the status indicator. The status indicator may visually indicate the status of the emergency lighting means driver, e.g. the driver is properly working, has passed a test (performed at last), malfunctions or has failed the test. The status indicator may comprise a light source that emits light for indicating that the emergency is properly working (thus ready to function during the emergency situation) and, thus, has passed a test performed at last.

[0006] In an emergency lighting system, usually every emergency lighting means driver is to be regularly tested at least for the aforementioned function test and the duration test. For this, in the emergency lighting system the test (e.g. duration test and/or function test) may be regularly performed in an automated fashion, e.g. every 365 days. That is a test routine for the respective test to be performed may be regularly performed in an automated fashion (i.e. may be automatically performed regularly), e.g. every 365 days. The passage "automated fashion" or "automatically performed" may be understood such that the test of the respective emergency lighting means driver may be performed without the need that a person actively triggers the test to be performed. The terms "person" and "user" may be sued as synonyms.

[0007] Currently, the status of a test, such as a duration test, may only be known when the test is being carried out, because the light source of the status indicator (e.g. a light source for emitting green light) flashes, i.e. emits flashing light, while the test is performed. Thus, a user of the emergency lighting system would only be aware of the test (e.g. duration test and/or function test) being performed, if the user notices the flashing status indicator while the test is running or in the event of a failed test (i.e. the emergency lighting means driver not passing the test). For example, in case the emergency lighting means driver fails the test, the status indicator may emit light of a different color (e.g. red light) compared to the case in which the status indicator passes the test. Thus, it may be a problem that nobody notices whether a respective test (test routine) has been performed or not, unless the emergency lighting means driver fails the test causing the status indicator to emit light of a different color compared to the case of the test being passed. For example, in case the test is performed at a time (e.g. night time) at which no person is present at the installation location of the status indicator associated to the driver, nobody may observe that the test of the driver is being performed, unless the driver fails the test. Currently, the only way a person may be sure that a test (e.g. duration tests and/or function test) is actually performed at the time it is to be performed, the person either needs to actively trigger the test or needs to constantly observe the status indicator associated with the emergency lighting means driver.

[0008] The aforementioned two options are both disadvantageous, especially in case of an emergency lighting system comprising multiple emergency lighting means drivers. Namely, this would require that records

comprising the date of tests performed of all the multiple emergency lighting means driver would need to be kept in order to be able to plan the time of a test (e.g. duration tests and/or function test) to be performed again in order to ensure that the test is regularly performed . Constantly observing multiple emergency lighting means drivers would be very time consuming and, thus, requires respective personnel.

[0009] In the light of the above, it is an object of the present invention to provide an entity allowing a user of a lighting system to know conveniently whether a test of an emergency lighting means driver has been performed in order for the user to know that an automated regular testing of the emergency lighting means driver is done.

[0010] These and other objects, which become apparent upon reading the following description, are solved by the subject-matter of the independent claim. The dependent claims refer to preferred embodiments of the invention.

[0011] According to a first aspect of the invention, an entity for controlling a status indicator is provided, wherein the status indicator is associated with an emergency lighting means driver. Optionally the emergency lighting means driver is an emergency light emitting diode driver (emergency LED driver). The status indicator comprises a light source. The light source is optionally a light emitting diode (LED). The entity is configured to control the status indicator such that, during a first time period directly before a test of the emergency lighting means driver is performed, the light source flashes during a second time period, wherein the second time period occurs at regular time intervals. That is, the second time period occurs at regular time intervals during the first time period.

[0012] In other words, an entity is proposed that is configured to control the status indicator such that, during a first time period, the light source flashes during a second time period that is repeated at regular time intervals during the first time period, wherein the first time period is directly before a test of the emergency lighting means driver is performed.

[0013] The aforementioned flashing of the light source of the status indicator during the at regular time intervals repeating second time period (during the first time period directly before the test of the emergency lighting means driver is performed) allows a person observing the flashing to know that in the near future the test of the emergency lighting means driver is to be performed. That is, it allows the person to know that the test is scheduled. Since, the flashing of the light source during the second time period is repeated in regular time intervals during the first time period it is ensured that the person may observe the flashing, even in case the person is not present at the location of the status indicator for a certain time. For example, in case the first time period is a week and the second time period is ten seconds that is repeated every five minutes a person working at an office where the status indicator is indicated may observe due to the aforementioned flashing of the light source of the status indicator that a test is to be performed. This is not prevented by the fact that the person may be not at the office at night times or during weekends.

[0014] For driving lighting means, e.g. emergency lighting means, the emergency lighting means driver may comprise one or more power converters, such as one or more actively switched power converters and/or one or more passive power converters. The emergency lighting means driver may comprise or be electrically connected to one or more batteries for electrical supplying lighting means in an emergency situation (e.g. mains failure). The above description of emergency lighting means drivers is valid for the emergency lighting means driver. The emergency lighting means driver may be implemented by any means known in the state of the art and, thus, no further details are provided with regard to the emergency lighting means driver. The above description of a status indicator is valid for the status indicator.

[0015] The term "blink" may be used as a synonym for the term "flash". The passage "light source flashes" may be understood as the light source emitting light in transient light bursts. The term "light flashes" may be used as synonym for the term "light bursts". Thus, when the light source is flashing, the light emission by the light source is periodically interrupted generating transient light flashes (transient light bursts).

[0016] The passage "the status indicator is associated with the emergency lighting means driver" may be understood as meaning that the status indicator is configured to visually indicate the status of the emergency lighting means driver, e.g. the driver is properly working, has passed a test (performed at last), malfunctions or has failed the test.

[0017] The aforementioned control of the status indicator by the entity such that, during the first time period directly before the test of the emergency lighting means driver is performed, the light source flashes during the second time period occurring at regular time intervals during the first time period may comprise the following case: the light source emits light, e.g. flashes, at least once during the first time period outside the second time period, i.e. between the at regular time intervals occurring second time period. Optionally, the entity may be configured to control the status indicator such that during the first time period, the light source may flash at least one time in addition to flashing during the second time period.

[0018] The passage "the second time period occurs at regular time intervals during the first time period" means that the second time period is repeated during the first time period, wherein the time (interval) between a starting time point of the resulting second time periods is constant. Thus, the time (interval) between the resulting second time periods is constant. In other words, the entity is configured to control the status indicator such that, during the first time period directly before the test is performed, the light source flashes during multiple second time periods that are equally spaced apart in time from

each other. That is, according to the aforementioned control of the status indicator by the entity, there are multiple second time periods present during the first time period that are equally spaced apart from each other in time (i. e. the second time period occurs at regular time intervals during the first time period). During each second time period the light source flashes. The passage "directly before the test of the driver is performed" may be understood to mean "directly before a time point at which the test of the driver is planned or scheduled to be performed".

[0019] Optionally, the entity may be configured to control the status indicator such that during the time between the second time periods that occur at regular intervals during the first time period the light source does not emit light. In other words, the entity may be configured to control the status indicator such that outside the second time period that occurs at regular intervals during the first time period the light source does not emit light.

[0020] The first time period, the second time period and the regular time intervals may be selected or set such that a person is able to observe the flashing of the light source of the status indicator at least once (optional multiple times) at usual times the person is present at a location of installation of the status indicator. The terms "first" and "second" with regard to the time periods are merely used for distinguishing between the first time period and the second time period.

[0021] The entity may be configured to control the status indicator using one or more control signals. The entity may be configure to provide the one or more control signals to the status indicator and/or to an electrical power supply of the status indicator. The entity may be configured to provide the one or more control signals wirelessly and/or in a wired way. For example, the entity may be configured to provide the one or more control signals via a wired bus, such as a DALI bus and/or DALI-2 bus. DALI (DALI Edition 1) and DALI-2 (DALI Edition 2) are two well known standards in the field of lighting. Any wired bus mentioned herein may optionally be a DALI bus and/or DALI-2 bus

[0022] Optionally, the entity is configured to control the status indicator such that during the first time period the light source emits, at the regular time intervals, two or more light flashes.

[0023] In other words, during the second time period the light source may be controlled to emit two or more light flashes.

[0024] Optionally, the first time period is two or more days. The first time period may be one week.

[0025] The two or more days may be working days.

[0026] Optionally, the entity is configured to control the status indicator such that during the first time period the light source emits two or more light flashes every five minutes or every hour.

[0027] In other words, the regular time intervals may be such that the light source emits two or more light flashes every five minutes or every hour.

[0028] Optionally, the entity is configured to control the status indicator such that the light source flashes during the test of the emergency lighting means driver.

[0029] Optionally, the entity is configured to control the status indicator such that the light source flashes during the test of the emergency lighting means driver and a flashing rate of the light source during the test of the emergency lighting means driver equals a flashing rate of the light source during the first time period. That is, the flashing rate of the light source during the test of the emergency lighting means driver equals the flashing rate of the light source during the second time period occurring at regular time intervals during the first time period.

[0030] This has the advantage that the electrical power supply for the status indicator for indicating that the test is performed may be used for indicating that a test is scheduled by the aforementioned flashing of the light source during the first time period.

[0031] Optionally, the test is a duration test of the emergency lighting means driver.

[0032] Optionally, the test may be a function test of the emergency lighting means driver. The test may be either one of the duration test and the function test of the emergency lighting means driver. That is the entity may be configured to perform the herein described control of the status indicator with regard to the duration test and/or the function test of the emergency lighting means driver. In addition or alternatively, the test may be any other known test of the emergency lighting means driver.

[0033] Optionally, the entity is configured to control the status indicator such that the light source continuously emits light in response to the emergency lighting means driver successfully completing the test. In other words, the entity may be configured to control the status indicator such that the light source emits solid light in response to the emergency lighting means driver successfully completing the test.

[0034] Thus, the aforementioned control by the entity of the status indicator regarding the light source of the status indicator flashing during the first time period before the test is performed allows a person to know that the test is scheduled and when the light source continuously emits light to know that the scheduled test has been passed successfully. Since the light source is also used to indicated other indications compared to the indication that a test of the emergency lighting means driver is to be performed in the near future (i.e. starting at the end of the first time period), the electric power circuit for electrically powering the indication that the emergency lighting means driver has successfully completed the test may also be used for powering the indication that the test is to be performed, during the first time period directly before the test is performed. The light source may emit light of a color (e.g. green light).

[0035] Optionally, the entity is configured to control the status indicator such that the light source does not emit light in response to the emergency lighting means driver failing the test.

[0036] Optionally, the status indicator comprises a second light source, for emitting light of a color different of a color of the light emittable by the light source. The second light source is optionally a second light emitting diode. The entity is optionally configured to control the status indicator such that the second light source emits light in response to the emergency lighting means driver failing the test. Optionally, the entity is configured to control the status indicator such that the second light source continuously emits light in response to the emergency lighting means driver failing the test. In other words, the entity may be configured to control the status indicator such that the second light source emits solid light in response to the emergency lighting means driver failing the test.

[0037] The color of the light emittable by the light source may be green. The color of the light emittable by the second light source may be red. Alternatively to the status indicator comprising the second lights source, e. g. second LED, the light source of the status indicator may be configured to emit light of two different colors. The entity may be configured to control the status indicator such that the light source emits light of a first color (e.g. green) during the first time period (i.e. in a flashed form during the second time period that occurs at regular time intervals during the first time interval). Optionally, the entity is configured to control the status indicator such that the light source emits flashed light in the first color during the test of the emergency lighting means driver is performed. The entity may be configured to control the status indicator such that the light source continuously emits light in the first color in response to the emergency lighting means driver successfully completing the test. That is, the entity may be configured to control the status indicator such that the light source emits solid light of the first color in response to the emergency lighting means driver successfully completing the test. The entity may be configured to control the status indicator such that the light source does not emit light of the first color in response to the emergency lighting means driver failing the test. The entity may be configured to control the status indicator such that the light source emits light in the second color (e.g. red) in response to the emergency lighting means driver failing the test. For example, the entity may be configured to control the status indicator such that the light source continuously emits light in the second color in response to the emergency lighting means driver failing the test. That is, the entity may be configured to control the status indicator such that the light source emits solid light of the second color in response to the emergency lighting means driver failing the test.

[0038] Optionally, the entity is configured to determine a time at which the test of the emergency lighting means driver is to be performed. In addition or alternatively, the entity may be configured to receive, from outside the entity, information on the time at which the test of the emergency lighting means driver is to be performed. The time at which the test is to be performed may be a time point at which the test is to be started. The information on the time at which the test of the emergency lighting means driver is to be performed may comprise the time point at which the test is to be started. The term "point in time" may be used as a synonym for the term "time point".

[0039] For example, the entity may use a database and/or one or more look-up tables for determining the time at which the test of the emergency lighting means driver is to be performed. In addition or alternatively, the entity may compute, using one or more algorithms, the time at which the test of the emergency lighting means driver is to be performed. The entity may receive, from outside the entity, information on the time at which the test is to be performed by wired and/or wireless communication. For example, the entity may receive, from outside the entity, information on the time at which the test is to be performed from a person, a central control entity etc. The entity may comprise or be electrically connected to a data storage and may be configured to use data of the data storage for determining the time at which the test is to be performed. The entity may be configured to store data in the data storage.

[0040] Optionally, the entity is configured to store at least one of the first time period, the regular time intervals and the second time period. In addition or alternatively, the entity may be configured to receive, from outside the entity, at least one of the first time period, the regular time intervals and the second time period. The entity may be configured to store data, such as the first time period, the regular time intervals and/or the second time period, in a data storage. The entity may comprise the data storage or may be electrically connected to the data storage. The entity may be configured to receive, from outside the entity, data, such as the first time period, the regular time intervals and/or the second time period, by wired and/or wireless communication. For example, the entity may receive, from outside the entity, the data from a person, a central control entity etc.

[0041] Optionally, the entity is configured to control the emergency lighting means driver to perform the test. Optionally, the entity is configured to control operation of the emergency lighting means driver. For this, the entity may be configure to provide one or more control signals to the emergency lighting means driver, e.g. an electrical power supply of the emergency lighting means driver. The entity may be configured to provide the one or more control signals wirelessly and/or in a wired way. For example, the entity may be configured to provide the one or more control signals via a wired bus,

[0042] Optionally, the entity is a control circuit for controlling the status indicator and/or for controlling the emergency lighting means driver. The entity may comprise at least one of a controller, microcontroller, processor, microprocessors, application specific integrated circuit (ASIC) and field programmable gate array (FPGA).

[0043] The entity may be configured to communicate wirelessly with the emergency lighting means driver and/or the status indicator. In addition or alternatively, the entity may be configured to communicate in a wired

way (e.g. via a wired bus) with the emergency lighting means driver and/or the status indicator.

[0044] The entity may be configured to be electrically connected with the status indicator and/or the emergency lighting means driver. The entity may be configured to be part of the status indicator or the emergency lighting means driver.

[0045] The entity is optionally software.

[0046] In order to achieve the entity according to the first aspect of the present invention, some or all of the above described optional features may be combined with each other.

[0047] According to a second aspect of the invention, an emergency lighting system is provided. The emergency lighting system is optionally an emergency lighting luminaire. The emergency lighting system comprises an entity according to the first aspect, as described herein, and a status indicator, which is associated with an emergency lighting means driver for driving lighting means. The entity is configured to control the status indicator. Optionally, the emergency lighting system comprises the emergency lighting means driver. Optionally the emergency lighting means driver is an emergency light emitting diode driver and the lighting means are one or more light emitting diodes. The emergency lighting system may comprise the lighting means.

[0048] The above description with regard to the entity according to the first aspect of the present invention is also valid for the emergency lighting system according to the second aspect of the present invention.

[0049] The above description of the emergency lighting means driver is valid for the emergency lighting means driver of the emergency lighting system. The above description of the status indicator is valid for the status indicator of the emergency lighting system.

[0050] The emergency lighting means driver may be electrically connected to the status indicator or may comprise the status indicator. Optionally, the emergency lighting means driver may be configured to communicate in a wired way (e.g. via a wired bus) and/or wirelessly with the status indicator and/or the entity so that the status indicator and/or the entity may know the status of the emergency lighting means driver. The status may comprise for example whether the driver has passed the test or failed the test.

[0051] The entity may be electrically connected with the status indicator and/or the emergency lighting means driver. The entity may be part of the status indicator or the emergency lighting means driver.

[0052] A housing may at least partly encompass the status indicator and the entity. A housing may at least partly encompass at least a part of the components of the emergency lighting means driver and may at least partly encompass at least one of the status indicator and the entity. In case the emergency lighting system is an emergency luminaire, a housing of the emergency luminaire may encompass at least partly the emergency lighting means driver. The emergency luminaire's housing may at least partly encompass at least one of the lighting means, the status indicator and the entity. The components of the status indicator may be at least partly encompassed in a housing.

[0053] The description of the emergency lighting system of the second aspect is valid for describing the entity of the first aspect.

[0054] The emergency lighting system according to the second aspect achieves the same advantages as the entity according to the first aspect.

[0055] According to a third aspect of the invention, a method for controlling a status indicator associated with an emergency lighting means driver is provided. Optionally, the emergency lighting means driver is an emergency light emitting diode driver. The status indicator comprises a light source. The light source is optionally a light emitting diode. The method comprises controlling the status indicator such that, during a first time period directly before a test of the emergency lighting means driver is performed, the light source flashes during a second time period, wherein the second time period occurs at regular time intervals.

[0056] The above description with regard to the entity according to the first aspect of the present invention and the emergency lighting system of the second aspect of the present invention is also valid for the method according to the third aspect of the present invention.

[0057] The method according to the third aspect achieves the same advantages as the entity according to the first aspect.

[0058] According to a fourth aspect of the invention, a computer program is provided. The computer program comprises instructions, which, when the program is executed by a computer, cause the computer to carry out the method according to the third aspect of the present invention.

[0059] According to a fifth aspect of the invention, a computer-readable medium is provided. The computer-readable medium comprises instructions which, when executed by a computer, cause the computer to carry out the method according to the third aspect of the present invention.

[0060] The computer program according to the fourth aspect and the computer-readable medium according to the fifth aspect each achieve the same advantages as the entity according to the first aspect.

[0061] According to a sixth aspect of the invention, a method for operating a status indicator associated with an emergency lighting means driver is provided. Optionally, the emergency lighting means driver is an emergency light emitting diode driver. The status indicator comprises a light source. The light source is optionally a light emitting diode. The method comprises, during a first time period directly before a test of the emergency lighting means driver is performed, flashing the light source during a second time period, wherein the second time period occurs at regular time intervals.

[0062] The above description with regard to the entity

according to the first aspect of the present invention and the emergency lighting system of the second aspect of the present invention is also valid for the method according to the sixth aspect of the present invention.

[0063] The method according to the sixth aspect achieves the same advantages as the entity according to the first aspect.

[0064] All steps which are performed by the various entities described in the present application as well as the functionalities described to be performed by the various entities are intended to mean that the respective entity is adapted to or configured to perform the respective steps and functionalities.

[0065] In the following, the invention is described exemplarily with reference to the enclosed figures, in which

Figure 1 schematically shows an example of an entity and an emergency lighting system of the present invention,

Figure 2 (a) shows a time flow of an example of a control of a status indicator, which is associated with an emergency lighting means driver, that may be performed by an entity of the present invention, and

Figure 2 (b) shows an enlargement of a part of the time flow of Figure 2 (a).

[0066] In the Figures, corresponding elements have the same reference signs. The dimensions
of the time periods of Figures 2 (a) and 2 (b) are not to scale, but are merely chosen to describe an example of a control of a status indicator, which is associated with an emergency lighting means driver, that may be performed by an entity of the present invention.

[0067] **Figure 1** schematically shows an example of an entity and an emergency lighting system of the present invention. The entity of Figure 1 is an example of the entity according to the first aspect of the invention. The emergency lighting system is an example of the emergency lighting system according to the second aspect of the invention. Thus, the description of the entity according to the first aspect and the description of the emergency lighting system according to the second aspect are correspondingly valid for describing Figure 1, such as describing the entity and the emergency lighting system of Figure 1. In the following the emergency lighting means driver is abbreviated by the term "driver".

[0068] The entity 1 of Figure 1 is an entity for controlling a status indicator 2, wherein the status indicator 2 is associated with a driver 3 and the status indicator 2 comprises a light source 2a. The entity 1 is configured to control the status indicator 2 such that, during a first time period directly before a test of the driver 3 is performed, the light source 2a flashes during a second time period, wherein the second time period occurs at regular time intervals. That is, the second time period occurs at regular time intervals during the first time period. The driver 2 may be for example an emergency light emitting diode driver (emergency LED driver). The light source 2a is optionally a light emitting diode (LED).

[0069] The entity 1 may be software and/or hardware. According to the example of Figure 1, it is assumed that the entity 1 is a control circuit for controlling the status indicator 2. Optionally, the entity 1 is a control circuit for controlling the emergency lighting means driver 3. This is only by way of example and does not limit the present invention.

[0070] According to the example of Figure 1, the status indicator 2 may be electrically connected to the driver 3. Alternatively, the status indicator 2 may be not be electrically connected to the driver 3 (not shown in Figure 1). Optionally, the driver 3 may comprise the status indicator 2. The driver 3 may be configured to communicate wired (e.g. via a wired bus) and/or wirelessly with the status indicator 2 and/or the entity 1 so that the status indicator 2 and/or the entity 1 may know the status of the driver 3, such as whether the driver 3 has passed the test or failed the test. The aforementioned communication may be bi-directional.

[0071] According to the example of Figure 1, the entity 1 may be electrically connected to the status indicator 2. Alternatively, the entity 1 may be not be electrically connected to the status indicator 2 (not shown in Figure 1). Optionally, the status indicator 2 may comprise the entity 1 (not shown in Figure 1). The entity 1 may be configured to communicate wired (e.g via a wired bus) and/or wirelessly with the status indicator 2 and/or the driver 3. This communication may be bi-directional.

[0072] Optionally, the entity 1 may be configured to control the status indicator 2 such that during the first time period the light source 2a emits, at the regular time intervals, two or more light flashes.

[0073] Optionally, the first time period is two or more days, optionally one week. Optionally, the entity 1 is configured to control the status indicator 2 such that during the first time period the light source emits two or more light flashes every five minutes or every hour.

[0074] Optionally, the entity 1 is configured to control the status indicator 2 such that the light source flashes during the test of the driver 3. The test may be a duration test or a function test of the driver 3.

[0075] Optionally, the entity 1 is configured to control the status indicator such that the light source continuously emits light in response to the driver 3 successfully completing the test. Optionally, the entity 1 is configured to control the status indicator 2 such that the light source 2a does not emit light in response to the driver 3 failing the test.

[0076] Optionally, the status indicator 2 comprises a second light source 2b (indicated in Figure 1 by a dashed box), for emitting light of a color different of a color of the light emittable by the light source 2a. The light source 2a may be referred to as "first light source" of the status indicator. The terms "first" and "second" are merely used

for distinguishing between the light source 2a and the optional further light source 2b of the status indicator 2. The second light source 2b is optionally a second light emitting diode. The entity 1 is optionally configured to control the status indicator 2 such that the second light source 2b emits light in response to the driver 3 failing the test.

[0077] For further details on the entity 1, such as the function of the entity 1 and/or relationship to other components, reference is made to the description of Figures 2 (a) and 2 (b) and to the description of the entity according to the first aspect as well as to the description of the emergency lighting system according to the second aspect.

[0078] The entity 1, the status indicator 2 and optionally the driver 3 may form the emergency lighting system 100. The emergency lighting system 100 may be an emergency luminaire. For further details on the emergency lighting system 100 reference is made to the description of the emergency lighting system according to the second aspect.

[0079] **Figure 2 (a)** shows a time flow of an example of a control of a status indicator, which is associated with an emergency lighting means driver, that may be performed by an entity of the present invention; and **Figure 2 (b)** shows an enlargement of a part of the time flow of Figure 2(a). The status indicator, emergency lighting means driver and the entity are assumed to be the status indicator 2, the emergency lighting means driver 3 and the entity 1 of Figure 1, respectively. In the following the emergency lighting means driver 3 is abbreviated by the term "driver".

[0080] As shown in Figure 2 (a), a test of the driver 3 may be performed during a test time period Po. The test of the driver is assumed to be a duration test. This is only by way of example and, thus, in addition or alternatively the test may be a different test, such as a function test. The test of the driver 3 may be automatically performed at regular time intervals P_4 (i.e. without the need that a person triggers the test). The regular time interval for automatically performing the test of the driver 3 is indicated in Figure 2 by the reference signs "P4". The aforementioned time interval P4 may be for example 6 months or 12 months (e.g. 365 days). In other words, the test of the driver 3 may be scheduled to be performed twice or once a year, respectively. According to Figure 2 (a), at the time point T1 and the time point T4 the test of the driver 3 is started. Since the test of the driver 3 may last for the test time period Po (i.e. the test is performed during the test time period Po), the test ends at the time point T2 and the time point T5, respectively.

[0081] As shown in Figures 2 (a) and 2 (b), before the time point T1 or T4, at which the test is started, the entity 1 controls the status indicator 2 such that, during a first time period P1 directly before the test of the driver 3 is performed, the light source 2a flashes during a second time period P2, wherein the second time period P2 occurs at regular time intervals P3. In Figure 2 (a), the second time period P2 that occurs at regular time intervals P3 and the regular time intervals P3 are not shown. This however does not mean that they are not present during the first time period P1. The difference between the time point To and the time point T1, at which the test of the driver 3 is started, and the difference between the time point T3 and the time point T4, at which the test of the driver 3 is started, each equals to the first time period T1. According to Figure 2 (b), the entity 1 may control the status indicator 2 such that the second time period P2 starts immediately at the time point T0 or T3, at which the first time period P1 starts. This is only an example. Thus, alternatively, the control of the status indicator 2 by the entity 1 may be such that the second time period P2 starts at a time point after the time point To or T3, at which the first time period P1 starts.

[0082] As shown in Figure 2 (b), the passage "the second time period P2 occurs at regular time intervals P3 during the first time period P1" means that the second time period P2 is repeated during the first time period P1, wherein the time (interval) P3 between the starting time point of the resulting second time periods P2 is constant. In other words, the entity 1 is configured to control the status indicator 2 such that, during the first time period P1 directly before the test of the driver 3 is performed (i.e. directly before the time point T1 or T4), the light source 2a flashes during multiple second time periods P2 that are equally spaced apart in time from each other. That is, according to the control of the status indicator by the entity shown in Figures 2 (a) and 2 (b), there are multiple second time periods P2 present during the first time period P1 that are equally spaced apart from each other in time. As shown in Figure 2 (b), the passage "the second time period P2 occurs at the regular time intervals P3 during the first time period P1" may mean that the time points at which the second time period P2 starts are equally space apart in time by the regular time intervals P3. The terms "start" and "begin" may be used as synonyms.

[0083] The control of the status indicator 2 by the entity 1 such that, during the first time period P1 (directly before the test of the driver 3 is performed), the light source 2a flashes during the second time period P2 occurring at regular time intervals P3 during the first time period P1 may comprise the case where the light source 2a emits light, e.g. flashes, at least once during the first time period P1 outside the second time period P2. This means, the control of Figure 2 (a) and 2 (b) may comprise the case where the light source 2a emits light, e.g. flashes, at least once between the at regular time intervals P3 occurring second time period P2. In other words, the control of Figure 2 (a) and 2 (b) may comprise the case, where the light source 2a at least once emits lights, e.g. flashes, between the multiple second time periods P2 that are equally space apart during the first time period P1.

[0084] The entity 1 may be configured to control the status indicator 2 such that during the first time period P1 the light source 2a emits, at the regular time intervals

T3, two or more light flashes (not shown in Figures 2 (a) and 2(b)). In other words, during the second time period P2 the light source 2a may be controlled to emit two or more light flashes. The first time period P1 may be two or more days, optionally one week. Optionally, the entity 1 is configured to control the status indicator 2 such that during the first time period P1 the light source 2a emits two or more light flashes every five minutes or every hour. In other words, the regular time intervals P3 may be such that the light source 2a emits two or more light flashes every five minutes or every hour. For example, the regular time intervals P3 and the second time period P2 may be selected or set such that the regular time intervals equals to five minutes or one hour and the light source 2a emits two or more light flashes during the second time period P2.

[0085] According to Figure 2 (b), the first time period P1 ends at the end of the regular time interval P3. This is only by way of example and, thus, the first time period P1 may end at a different time point. The number of the second time period P2 during the first time period P1 shown in Figure 2 (b) is only by way of example and may be different.

[0086] In the claims as well as in the description the word "comprising" does not exclude other elements or steps and the indefinite article "a" or "an" does not exclude a plurality. A single element or other unit may fulfill the functions of several entities or items recited in the claims. The mere fact that certain measures are recited in the mutual different dependent claims does not indicate that a combination of these measures cannot be used in an advantageous implementation.

Claims

1. An entity (1) for controlling a status indicator (2) associated with an emergency lighting means driver (3), optionally emergency light emitting diode driver, the status indicator (2) comprising a light source (2a), optionally a light emitting diode; wherein

    - the entity (1) is configured to control the status indicator (2) such that, during a first time period (P1) directly before a test of the emergency lighting means driver is performed, the light source (2a) flashes during a second time period (P2), wherein the second time period (P2) occurs at regular time intervals (P3).

2. The entity (1) according to claim 1, wherein

    - the entity (1) is configured to control the status indicator (2) such that during the first time period (P1) the light source (2) emits, at the regular time intervals (P3), two or more light flashes.

3. The entity (1) according to any one of the previous claims, wherein

    - the first time period (P1) is two or more days, optionally one week.

4. The entity (1) according to any one of the previous claims, wherein

    - the entity (1) is configured to control the status indicator (2) such that during the first time period (P1) the light source (2a) emits two or more light flashes every five minutes or every hour.

5. The entity (1) according to any one of the previous claims, wherein

    - the entity (1) is configured to control the status indicator (2) such that

        - the light source (2a) flashes during the test of the emergency lighting means driver (3), and
        - optionally a flashing rate of the light source (2a) during the test of the emergency lighting means driver (3) equals a flashing rate of the light source (2a) during the first time period (P1).

6. The entity (1) according to any one of the previous claims, wherein

    - the test is a duration test of the emergency lighting means driver (3).

7. The entity (1) according to any one of the previous claims, wherein

    - the entity (1) is configured to control the status indicator (2) such that the light source (2a) continuously emits light in response to the emergency lighting means driver (3) successfully completing the test.

8. The entity (1) according to any one of the previous claims, wherein

    - the entity (1) is configured to control the status indicator (2) such that the light source (2a) does not emit light in response to the emergency lighting means driver (3) failing the test.

9. The entity (1) according to any one of the previous claims, wherein

    - the status indicator (2) comprises a second light source (2b), optionally a second light emitting diode, for emitting light of a color different of a color of the light emittable by the light source

(2a), and
- the entity (1) is configured to control the status indicator (2) such that the second light source (2b) emits light in response to the emergency lighting means driver (3) failing the test.

10. The entity (1) according to any one of the previous claims, wherein

- the entity (1) is configured to determine a time (T1, T4) at which the test of the emergency lighting means driver (3) is to be performed, and/or
- the entity (1) is configured to receive, from outside the entity (1), information on the time (T1, T4) at which the test of the emergency lighting means driver (3) is to be performed.

11. The entity (1) according to any one of the previous claims, wherein

- the entity (1) is configured to store at least one of the first time period (P1), the regular time intervals (P3) and the second time period (P2), and/or
- the entity (1) is configured to receive, from outside the entity (1), at least one of the first time period (P1), the regular time intervals (P3) and the second time period (P2).

12. An emergency lighting system (100), optionally emergency lighting luminaire, comprising

- an entity (1) according to any one of the previous claims, and
- a status indicator (2), which is associated with an emergency lighting means driver (3) for driving lighting means, wherein
- the entity (1) is configured to control the status indicator (2); and
- optionally the emergency lighting system (100) comprises the emergency lighting means driver (3).

13. A method for controlling a status indicator (2) associated with an emergency lighting means driver (3), optionally emergency light emitting diode driver, the status indicator (2) comprising a light source (2a), optionally a light emitting diode; wherein

- the method comprises controlling the status indicator (2) such that, during a first time period (P1) directly before a test of the emergency lighting means driver is performed, the light source (2a) flashes during a second time period (P2), wherein the second time period (P2) occurs at regular time intervals (P3).

14. A computer program comprising instructions, which, when the program is executed by a computer, cause the computer to carry out the method of claim 13.

15. A computer-readable medium comprising instructions which, when executed by a computer, cause the computer to carry out the method of claim 13.

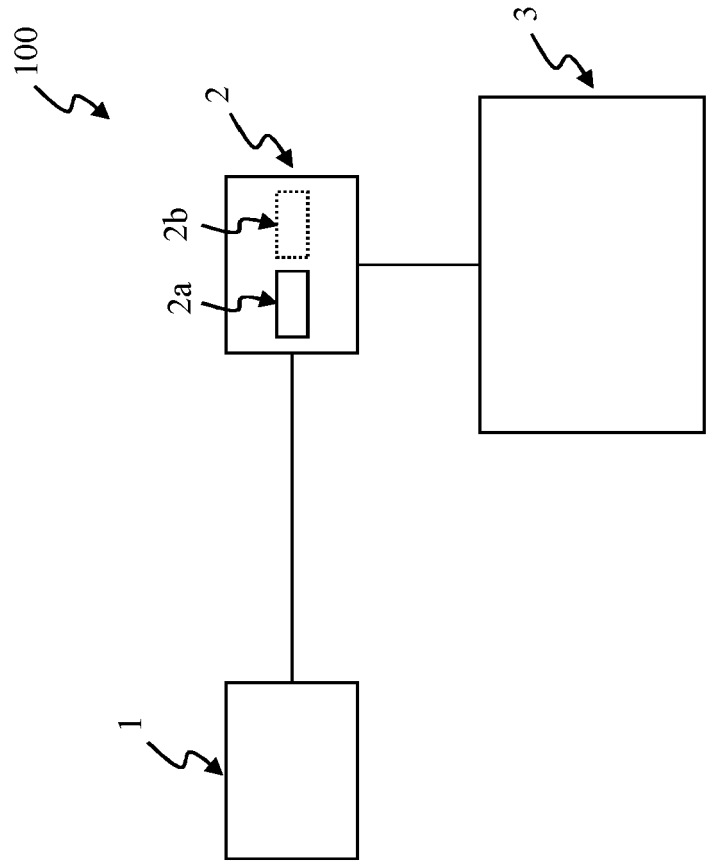

Figure 1

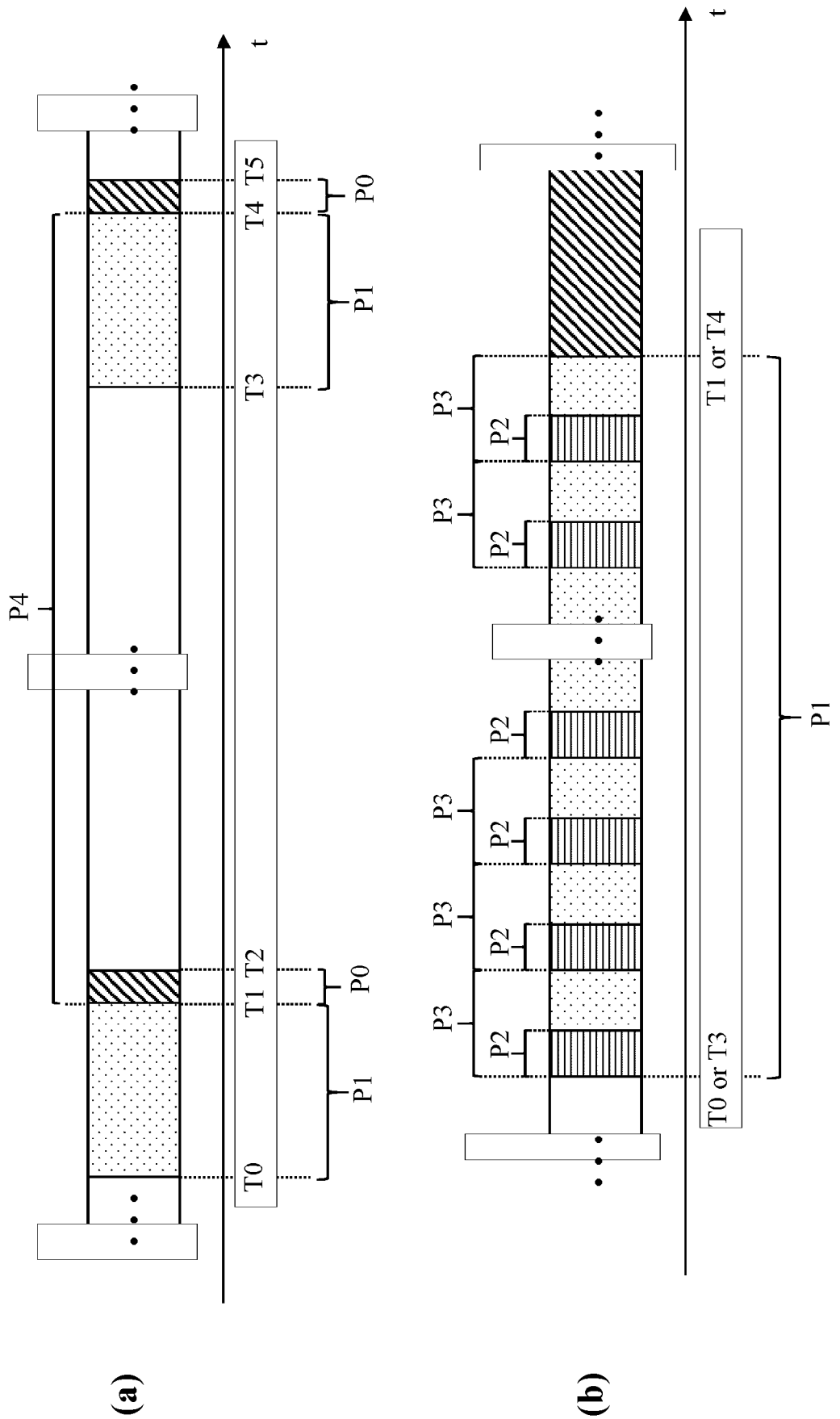

Figure 2

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EUROPEAN SEARCH REPORT

Application Number
EP 23 15 7718

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H05B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	12 June 2023	Henderson, Richard

CATEGORY OF CITED DOCUMENTS

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