



(11) **EP 4 550 281 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
07.05.2025 Bulletin 2025/19

(51) International Patent Classification (IPC):
G07C 1/20^(2006.01) G07C 1/10^(2006.01)

(21) Application number: **23829811.1**

(86) International application number:
PCT/CN2023/096327

(22) Date of filing: **25.05.2023**

(87) International publication number:
WO 2024/001626 (04.01.2024 Gazette 2024/01)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(30) Priority: **29.06.2022 CN 202210757866**

(71) Applicant: **Hangzhou Hikvision Digital Technology Co., Ltd.**
Hangzhou, Zhejiang 310051 (CN)

(72) Inventors:
• **XIONG, Hui**
Hangzhou, Zhejiang 310051 (CN)
• **SHAO, Youbang**
Hangzhou, Zhejiang 310051 (CN)

(74) Representative: **Epping - Hermann - Fischer**
Patentanwaltsgesellschaft mbH
Schloßschmidstraße 5
80639 München (DE)

(54) **VIDEO PATROL INSPECTION METHOD AND APPARATUS, ELECTRONIC DEVICE, AND COMPUTER PROGRAM PRODUCT**

(57) A video patrol inspection method and apparatus, an electronic device, and a computer program product, the method includes: acquiring a target patrol inspection task and, generating a patrol inspection evaluation record of the target patrol inspection task based on a scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task. Since the patrol inspection evaluation record of the target patrol inspection task further can be generated by acquiring a preset scheduled time range of the target patrol inspection task and the processing condition of the

target patrol inspection task after the target patrol inspection task is acquired, not only can the target patrol inspection task be executed, but also the patrol inspection evaluation record of the target patrol inspection task can be generated. Thus, when a specific finish condition of the target patrol inspection task needs to be traced back later, the specific finish condition of the target patrol inspection task can be traced back based on the patrol inspection evaluation record of the target patrol inspection task.

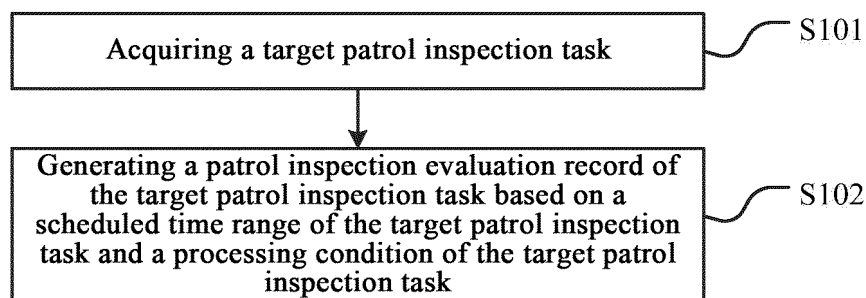


Fig.1

EP 4 550 281 A1

Description

[0001] The present application claims the priority to a Chinese patent application No. 202210757866.1 filed with the China National Intellectual Property Administration (CNIPA) on June 29, 2022 and entitled "VIDEO PATROL INSPECTION METHOD AND APPARATUS, ELECTRONIC DEVICE, AND COMPUTER PROGRAM PRODUCT", which is incorporated herein by reference in its entirety.

Technical Field

[0002] The present application relates to the technical field of security, in particular to a video patrol inspection method and apparatus, an electronic device, and a computer program product.

Background

[0003] With the development of Internet technology, remote monitoring is becoming more and more widely used in the technical field of security. By arranging a monitoring device in a scene required to be monitored, the monitoring device pushes an acquired image in the scene to a remote client, so that a monitoring image can be previewed in real time on the remote client or a historical monitoring video can be queried, so as to monitor the situation of a target scene. Video patrol inspection can be realized based on remote monitoring.

[0004] In the current video patrol inspection system, a task processing terminal can receive a patrol inspection task sent by a patrol inspection server, and an operator can open a patrol inspection interface on the client or a webpage at the task processing terminal for video patrol inspection, that is, the operator views a real-time monitoring image of the target scene or queries a historical monitoring video, to finish the patrol inspection task. Although the remote video patrol inspection can be performed based on this video patrol inspection, it does not facilitate tracking back on a specific finish condition of the patrol inspection task later.

Summary

[0005] The objective of the embodiments of the present application is to provide a video patrol inspection method and apparatus, an electronic device and a computer program product to enable to trace back a specific finish condition of a patrol inspection task. The specific technical solutions are as follows.

[0006] In a first aspect, an embodiment of the present application provide a video patrol inspection method, including:

acquiring a target patrol inspection task;

generating a patrol inspection evaluation record of the target patrol inspection task based on a scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task.

[0007] Optionally, generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task includes:

acquiring a start processing time of the target patrol inspection task, and recording an identifier of a target operator who executes the target patrol inspection task;

recording a patrol inspection start time of the target patrol inspection task if the start processing time is within the scheduled time range, wherein the scheduled time range is from a scheduled start time to a preset fault-tolerant end time; and/or,

recording a timeout identifier of the target patrol inspection task and/or recording a patrol inspection start time of the target patrol inspection task if the start processing time is later than the preset fault-tolerant end time.

[0008] Optionally, the method further includes:

recording a duration of a preset operation issued by the target operator for a patrol inspection interface during the target operator executing the target patrol inspection task;

displaying a patrol inspection finish identifier if the duration reaches a preset duration, to enable the target operator to

issue an operation of patrol inspection end based on the patrol inspection finish identifier;

resetting the duration to zero if the duration does not reach the preset duration and the target operator is detected to stop the preset operation.

[0009] Optionally, the method further includes:

when an operation of patrol inspection end issued by the target operator is acquired, updating a processing state in the patrol inspection evaluation record of the target patrol inspection task to a finished state, and recording a patrol inspection end time of the target patrol inspection task; and/or,

when an operation of discontinuing the target patrol inspection task issued by the target operator is acquired, updating the processing state in the patrol inspection evaluation record of the target patrol inspection task to an unfinished state.

[0010] Optionally, generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task includes:

updating a processing state in the patrol inspection evaluation record of the target patrol inspection task to a state of missed being processed when it is detected that a current time is later than a preset fault-tolerant end time and the processing condition of the target patrol inspection task is a condition that processing of the target patrol inspection task has not been started.

[0011] Optionally, before acquiring the start processing time of the target patrol inspection task, the method further includes:

determining whether another operator is processing the target patrol inspection task when a start processing operation issued by the target operator for the target patrol inspection task is acquired.

[0012] Optionally, if another operator is processing the target patrol inspection task, the method further includes:

displaying prompt information;

if an instruction to continue processing the target patrol inspection task issued by the target operator based on the prompt information is acquired, displaying a patrol inspection interface, and acquiring the start processing time of the target patrol inspection task.

[0013] Optionally, if no other operator is processing the target patrol inspection task, the method further includes:

determining whether a current time is within the scheduled time range.

[0014] Optionally, if the current time is within the scheduled time range, the method further includes:

displaying the patrol inspection interface, and acquiring the start processing time of the target patrol inspection task.

[0015] Optionally, if the current time is prior to the scheduled start time, the method further includes:

displaying information about a time interval from the current time to the scheduled start time, and acquiring the start processing time of the target patrol inspection task after the current time reaches the scheduled start time.

[0016] Optionally, the method is applied to a task processing terminal, and acquiring the target patrol inspection task includes:

acquiring the target patrol inspection task generated and sent to the task processing terminal by a patrol inspection server according to a preset patrol inspection schedule, or acquiring the target patrol inspection task triggered and generated by the target operator at the task processing terminal, or,

the method is applied to a patrol inspection server, and acquiring the target patrol inspection task includes:

acquiring the target patrol inspection task generated according to the preset patrol inspection schedule.

[0017] Optionally, the method further includes:

sending the target patrol inspection task to the task processing terminal;

wherein generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task includes: generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task by the task

processing terminal.

[0018] Optionally, the method further includes:

generating a patrol inspection reminder message corresponding to the target patrol inspection task based on a relationship among a current time, the scheduled time range and a preset notification time.

[0019] Optionally, generating the patrol inspection reminder message corresponding to the target patrol inspection task based on the relationship among the current time, the scheduled time range and the preset notification time includes:

regularly querying the scheduled time range of the target patrol inspection task included in a preset patrol inspection schedule;

generating a first reminder notification if the current time is between the preset notification time and a scheduled start time, wherein the first reminder notification carries a duration from the current time to the scheduled start time;

generating a second reminder notification if the current time is within the scheduled time range, wherein the second reminder notification carries a duration from the current time to a preset fault-tolerant end time.

[0020] In a second aspect, an embodiment of the present application provides a video patrol inspection apparatus, including:

a target patrol inspection task acquiring module, configured for acquiring a target patrol inspection task;

a patrol inspection evaluation record generating module, configured for generating a patrol inspection evaluation record of the target patrol inspection task based on a scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task.

[0021] Optionally, the patrol inspection evaluation record generating module includes:

an identifier recording unit, configured for acquiring a start processing time of the target patrol inspection task, and recording an identifier of a target operator who executes the target patrol inspection task;

a start recording unit, configured for recording a patrol inspection start time of the target patrol inspection task if the start processing time is within the scheduled time range, wherein the scheduled time range is from a scheduled start time to a preset fault-tolerant end time; and/or,

recording a timeout identifier of the target patrol inspection task and/or recording a patrol inspection start time of the target patrol inspection task if the start processing time is later than the preset fault-tolerant end time.

[0022] Optionally, the apparatus further includes:

a duration recording unit, configured for recording a duration of a preset operation issued by the target operator for a patrol inspection interface during the target operator executing the target patrol inspection task;

a first operation recording unit, configured for displaying a patrol inspection finish identifier if the duration reaches a preset duration, to enable the target operator to issue an operation of patrol inspection end based on the patrol inspection finish identifier;

a second operation recording unit, configured for resetting the duration to zero if the duration does not reach the preset duration and the target operator is detected to stop the preset operation.

[0023] Optionally, the apparatus further includes:

an end recording unit, configured for, when an operation of patrol inspection end issued by the target operator is acquired, updating a processing state in the patrol inspection evaluation record of the target patrol inspection task to a finished state, and recording a patrol inspection end time of the target patrol inspection task; and/or,

when an operation of discontinuing the target patrol inspection task issued by the target operator is acquired, updating the processing state in the patrol inspection evaluation record of the target patrol inspection task to an unfinished state.

[0024] Optionally, the patrol inspection evaluation record generating module includes:

a missed-being-processed recording unit, configured for updating a processing state in the patrol inspection evaluation record of the target patrol inspection task to a state of missed being processed when it is detected that a current time is later than the preset fault-tolerant end time and the processing condition of the target patrol inspection task is a condition that processing of the target patrol inspection task has not been started.

[0025] Optionally, the apparatus further includes:

a first determining unit, configured for determining whether another operator is processing the target patrol inspection task when a start processing operation issued by the target operator for the target patrol inspection task is acquired before acquiring the start processing time of the target patrol inspection task.

[0026] Optionally, the apparatus further includes:

a first display unit, configured for displaying prompt information if another operator is processing the target patrol inspection task;

a second display unit, configured for, if an instruction to continue processing the target patrol inspection task issued by the target operator based on the prompt information is acquired, displaying a patrol inspection interface, and acquiring the start processing time of the target patrol inspection task.

[0027] Optionally, the apparatus further includes:

a second determination unit, configured for determining whether a current time is within the scheduled time range if no other operator is processing the target patrol inspection task.

[0028] Optionally, the apparatus further includes:

a third display unit, configured for, if the current time is within the scheduled time range, displaying the patrol inspection interface, and acquiring the start processing time of the target patrol inspection task.

[0029] Optionally, the apparatus further includes:

a fourth display unit, configured for, if the current time is prior to the scheduled start time, displaying information about a time interval from the current time to the scheduled start time, and acquiring the start processing time of the target patrol inspection task after the current time reaches the scheduled start time.

[0030] Optionally, the apparatus is applied to a task processing terminal, and the target patrol inspection task acquiring module includes:

a first acquiring unit, configured for acquiring the target patrol inspection task generated and sent to the task processing terminal by a patrol inspection server according to a preset patrol inspection schedule, or acquiring the target patrol inspection task triggered and generated by the target operator at the task processing terminal; or,

the apparatus is applied to a patrol inspection server, and the target patrol inspection task acquiring module includes:

a second acquiring unit, configured for acquiring the target patrol inspection task generated according to the preset patrol inspection schedule;

optionally, the apparatus further includes:

a sending module, configured for sending the target patrol inspection task to the task processing terminal;

the patrol inspection evaluation record generating module includes:

a patrol inspection evaluation record generating unit, configured for generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task by the task processing terminal.

[0031] Optionally, the apparatus further includes:

a patrol inspection reminder message generating module, configured for generating a patrol inspection reminder message corresponding to the target patrol inspection task based on a relationship among the current time, the scheduled time range and a preset notification time;

optionally, the patrol inspection reminder message generating module includes:

a patrol inspection schedule querying unit, configured for regularly querying the scheduled time range of the

target patrol inspection task included in the preset patrol inspection schedule;

a first reminder notification generating unit, configured for generating a first reminder notification if the current time is between the preset notification time and the scheduled start time, wherein the first reminder notification carries a duration from the current time to the scheduled start time;

a second reminder notification generating unit, configured for generating a second reminder notification if the current time is within the scheduled time range, wherein the second reminder notification carries a duration from the current time to the preset fault-tolerant end time.

[0032] In a third aspect, an embodiment of the present application provides a video patrol inspection system, including a task processing terminal and a patrol inspection server, wherein:

the task processing terminal is configured for receiving a target patrol inspection task generated and sent by the patrol inspection server according to a preset patrol inspection schedule; or, acquiring a target patrol inspection task triggered and generated by a target operator; and generating a patrol inspection record of the target patrol inspection task based on a scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task;

the patrol inspection server is configured for generating the target patrol inspection task according to the preset patrol inspection schedule and send the target patrol inspection task to the task processing terminal;

the patrol inspection server is further configured for generating the patrol inspection record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task by the task processing terminal.

[0033] In a fourth aspect, an embodiment of the present application provides an electronic device, including a processor and a memory, wherein,

the memory is configured for storing a computer program;

the processor is configured for carrying out any method in the above first aspect when executing the program stored in the memory.

[0034] In a fifth aspect, an embodiment of the present application provides a computer program product containing instructions, which when running on a computer, causes the computer to carry out any method in the above first aspect.

[0035] In a sixth aspect, an embodiment of the present application provides a computer-readable storage medium having a computer program stored therein, wherein the computer program, when executed by a processor, carries out any method in the first aspect.

[0036] Beneficial effects of the embodiments of the present application are as follows:

In the solution provided by the embodiment of the present application, the target patrol inspection task can be acquired, and the patrol inspection evaluation record of the target patrol inspection task can be generated based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task. Since the patrol inspection evaluation record of the target patrol inspection task further can be generated by acquiring the preset scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task after the target patrol inspection task is acquired, not only can the target patrol inspection task be executed, but also the patrol inspection evaluation record of the target patrol inspection task can be generated. Thus, when the specific finish condition of the target patrol inspection task needs to be traced back later, the specific finish condition of the target patrol inspection task can be traced back based on the patrol inspection evaluation record of the target patrol inspection task. Of course, it is not necessary for any product or method implementing the present application to achieve all the advantages described above simultaneously.

Brief Description of the Drawings

[0037] The accompanying drawings described herein are intended to provide a further understanding of the present application and constitute a part of the same. The illustrative embodiments of the present application and their descriptions are used to explain the present application and do not constitute improper limitation of the present application.

Fig. 1 is a flow chart of a video patrol inspection method provided by an embodiment of the present application;

Fig. 2 is a flow chart for generating a patrol inspection evaluation record of a target patrol inspection task based on the embodiment shown in Fig. 1;

Fig. 3 is a flow chart for executing the target patrol inspection task based on the embodiment shown in Fig. 2;

Fig. 4 is a schematic diagram of a patrol inspection interface corresponding to the target patrol inspection task based on the embodiment shown in Fig. 3;

Fig. 5 is a schematic diagram of a patrol inspection evaluation record corresponding to the target patrol inspection task based on the embodiment shown in Fig. 1;

Fig. 6 is a flow chart of a processing flow of the target patrol inspection task based on the embodiment shown in Fig. 1;

Fig. 7 is a flow chart for receiving a patrol inspection reminder message based on the embodiment shown in Fig. 1;

Fig. 8 is a schematic diagram of a pop-up window of the patrol inspection reminder message based on the embodiment shown in Fig. 7;

Fig. 9 is a flow chart of another video patrol inspection method based on the embodiment shown in Fig. 1;

Fig. 10 is a flow chart for generating a patrol inspection reminder notification based on the embodiment shown in Fig. 9;

Fig. 11 is a flow chart for updating a patrol inspection evaluation record based on the embodiment shown in Fig. 9;

Fig. 12 is a schematic flow chart for sending a patrol inspection reminder notification by applying an embodiment of the present application;

Fig. 13 is a schematic flow chart for generating a patrol inspection evaluation record by applying an embodiment of the present application;

Fig. 14 is a schematic flow chart for processing a target patrol inspection task by applying an embodiment of the present application;

Fig. 15 is a schematic structure diagram of a video patrol inspection apparatus provided by an embodiment of the present application;

Fig. 16 is a schematic structure diagram of a video patrol inspection system provided by an embodiment of the present application;

Fig. 17 is a schematic structure diagram of an electronic device provided by an embodiment of the present application.

Detailed Description

[0038] In order to make the objective, technical solutions and advantages of the present application clearer and more understandable, the present application will be described in more detail below with reference to the accompanying drawings and embodiments. Obviously, the described embodiments are only some, and not all, of the embodiments of the present application. All other embodiments obtained based on the embodiments of the present application by those skilled in the art without any creative efforts fall into the scope of protection of the present application.

[0039] In order to trace back a specific finish condition of a patrol inspection task, the embodiments of the present application provide a video patrol inspection method and apparatus, a video patrol inspection system, an electronic device, a computer-readable storage medium and a computer program product. First, the video patrol inspection method provided by the embodiment of the present application is described below.

[0040] The video patrol inspection method provided by the embodiment of the present application can be applied to any electronic device in the video patrol inspection system that can perform video patrol inspection on a target scene, and the electronic device can be a task processing terminal, a patrol inspection server in the video patrol inspection system or the like. The task processing terminal can include a computer, a mobile phone, a video display device, etc., which is not

specifically limited here. For the sake of clear description, it will be referred to as an electronic device below.

[0041] As shown in Fig. 1, the video patrol inspection method includes:

S101, acquiring a target patrol inspection task.

S102, generating a patrol inspection evaluation record of the target patrol inspection task based on a scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task.

[0042] It can be seen that, in the solution provided by the embodiment of the present application, the target patrol inspection task can be acquired, and the patrol inspection evaluation record of the target patrol inspection task can be generated based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task. Since the patrol inspection evaluation record of the target patrol inspection task further can be generated by acquiring a preset scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task after the target patrol inspection task is acquired, not only can the target patrol inspection task be executed, but also the patrol inspection evaluation record of the target patrol inspection task can be generated. Thus, when a specific finish condition of the target patrol inspection task needs to be traced back later, the specific finish condition of the target patrol inspection task can be traced back based on the patrol inspection evaluation record of the target patrol inspection task.

[0043] In Step S101 of the embodiment of the present application, the electronic device can acquire the target patrol inspection task.

[0044] The target patrol inspection task is a patrol inspection task that can be processed by an operator in the video patrol inspection system. As one implementation, the target patrol inspection task can be stored in the task processing terminal in a form of patrol inspection task data packet, and the operator at the task processing terminal can open the patrol inspection task data packet to process the patrol inspection task corresponding to the patrol inspection task data packet. There are many methods for electronic device to acquire the target patrol inspection task. In one implementation, the target patrol inspection task can be generated and sent to the task processing terminal by the patrol inspection server in the video patrol inspection system according to a preset patrol inspection schedule. In another implementation, the target patrol inspection task can be triggered and generated by the operator at the task processing terminal.

[0045] The target patrol inspection task can be triggered and generated by the operator at the task processing terminal. The operator can generate the corresponding target patrol inspection task through a patrol inspection task triggering function at the task processing terminal, so that the electronic device can acquire the target patrol inspection task.

[0046] The target patrol inspection task can be generated and sent to the task processing terminal by the patrol inspection server according to the preset patrol inspection schedule. The patrol inspection schedule can include a condition for generating the target patrol inspection task, which is used to generate the corresponding target patrol inspection task. In one implementation, the video patrol inspection system can include a patrol inspection configuration terminal for configuring the preset patrol inspection schedule, and the patrol inspection server for storing the patrol inspection schedule and generating the target patrol inspection task according to the preset patrol inspection schedule, wherein the patrol inspection server can send the target patrol inspection task to the task processing terminal, and then the electronic device can acquire the target patrol inspection task. For example, the target patrol inspection task can specifically be "performing a video patrol inspection on real-time monitoring images of a target scene 3 obtained by a monitoring device 1 and a monitoring device 2 within a scheduled time from 7: 00 to 7: 15 on January 9, 2022".

[0047] Further, in the above Step S102, the electronic device can generate the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task.

[0048] The scheduled time range of the target patrol inspection task is a preset time range for processing the target patrol inspection task. After the electronic device acquires the target patrol inspection task, the operator can determine the time to process the target patrol inspection task based on the scheduled time range of the patrol inspection task. Sometimes, the operator may miss processing the target patrol inspection task. As the operator starts to process the target patrol inspection task, finishes the processing of the target patrol inspection task or misses to process the target patrol inspection task, the processing condition of the target patrol inspection task also changes, and the electronic device can update the patrol inspection evaluation record of the target patrol inspection task accordingly. The patrol inspection evaluation record is an evaluation and record of information related to the patrol inspection operation of the target patrol inspection task. For example, the patrol inspection evaluation record can include an identifier of a target operator who executes the target patrol inspection task, the patrol inspection start time, the patrol inspection end time and the processing state of the target patrol inspection task, etc., which is not specifically limited here.

[0049] By adopting the solution provided by the embodiment of the present application, the electronic device can acquire the target patrol inspection task, and generate the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol

inspection task. The electronic device can not only execute the target patrol inspection task, but also generate the patrol inspection evaluation record of the target patrol inspection task. Thus, when the specific finish condition of the target patrol inspection task needs to be traced back later, the electronic device can trace back the specific finish condition of the target patrol inspection task based on the patrol inspection evaluation record of the target patrol inspection task.

[0050] As one implementation of the embodiment of the present application, as shown in Fig. 2, generating the patrol inspection evaluation record of the target patrol inspection task on the basis of the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task can include: S201, acquiring a start processing time of the target patrol inspection task, and recording an identifier of a target operator who executes the target patrol inspection task; if the start processing time is within the scheduled time range, performing Step S202; and/or, if the start processing time is later than a preset fault-tolerant end time, performing Step S203.

[0051] The scheduled time range of the target patrol inspection task is from a scheduled start time to the preset fault-tolerant end time. Generally, if the current time has not reached the scheduled start time of the target patrol inspection task, the target patrol inspection task cannot be processed. After the current time reaches the scheduled start time of the target patrol inspection task, the operator can process the target patrol inspection task, and thus the electronic device can acquire the start processing time of the target patrol inspection task.

[0052] The electronic device can record the identifier of the target operator who executes the target patrol inspection task, and the target operator is an operator who executes this target patrol inspection task. In one implementation, when an operator starts processing the target patrol inspection task, the electronic device can acquire the start processing time of the target patrol inspection task, determine that the operator is the target operator, and record the identifier of the target operator, and then generate the patrol inspection evaluation record. The electronic device can update the patrol inspection evaluation record as the patrol inspection operation is started, discontinued or finished.

[0053] The scheduled time range is from the scheduled start time to the preset fault-tolerant end time, where the scheduled start time is a preset time to start processing the target patrol inspection task, and the preset fault-tolerant end time is a preset fault-tolerant time to process the target patrol inspection task. For example, the scheduled time range is from 10: 20 to 10: 35, that is, the scheduled start time is 10: 20 and the preset fault-tolerant end time is 10: 35. Then if the target operator starts processing the target patrol inspection task between 10: 20 and 10: 35, the preset fault-tolerant end time is not exceeded, i.e., it does not timed out. If the target operator starts processing the target patrol inspection task later than 10: 35, the preset fault-tolerant end time is exceeded, i.e., it has timed out.

[0054] In one implementation, since the target operator may not be able to process the target patrol inspection task within the scheduled time range, the target operator can process the target patrol inspection task in advance, that is, the target operator can start processing the target patrol inspection task prior to the scheduled start time, and then the electronic device can record the patrol inspection start time and record that the target operator starts processing the target patrol inspection task prior to the scheduled start time.

[0055] For example, the scheduled time range of the target patrol inspection task is from 10: 10 to 10: 20, the target operator can start processing the target patrol inspection task at 10: 00, and the electronic device can record that the start processing time of the target patrol inspection task is 10: 00, and record that the target operator starts processing the target patrol inspection task prior to the scheduled start time.

[0056] S202, recording a patrol inspection start time of the target patrol inspection task.

[0057] If the start processing time is within the scheduled time range, it means that the target operator starts processing the target patrol inspection task from the scheduled start time to the preset fault-tolerant end time. For example, the scheduled time is from 10: 20 to 10: 35, and the target operator starts processing the target patrol inspection task at 10: 25, which is later than the scheduled start time of 10: 20 and prior to the preset fault-tolerant end time of 10: 35. This means that the time when the target operator starts processing the target patrol inspection task meets requirements of the preset patrol inspection schedule and does not timed out. The electronic device can record the patrol inspection start time of the target patrol inspection task, that is, record that the patrol inspection start time of the target patrol inspection task is 10: 25.

[0058] S203, recording a timeout identifier of the target patrol inspection task, and/or, recording the patrol inspection start time of the target patrol inspection task.

[0059] If the start processing time is later than the preset fault-tolerant end time, it means that the target operator starts processing the target patrol inspection task later than the preset fault-tolerant end time. For example, the scheduled time is from 10: 20 to 10: 35, and the target operator starts processing the target patrol inspection task at 10: 40, which is later than the preset fault-tolerant end time of 10: 35. This means that the time when the target operator starts processing the target patrol inspection task does not meet requirements of the preset patrol inspection schedule and has timed out. In one implementation, the electronic device can record the timeout identifier of the target patrol inspection task, where the timeout identifier is configured to indicate that the time when the target operator starts processing the target patrol inspection task is later than the preset fault-tolerant end time, for example, the timeout identifier can be "having timed out".

[0060] In one implementation, the electronic device can record the patrol inspection start time of the target patrol inspection task. Since the scheduled time range of the target patrol inspection task has been determined, it can be determined that the time when the target operator starts processing the target patrol inspection task is later than the preset

fault-tolerant end time according to the recorded patrol inspection start time.

[0061] In one implementation, the electronic device can record the timeout identifier of the target patrol inspection task and the patrol inspection start time of the target patrol inspection task, and thus can also determine that the time when the target operator starts processing the target patrol inspection task is later than the preset fault-tolerant end time.

[0062] In this embodiment, the electronic device can acquire the start processing time of the target patrol inspection task, and record the identifier of the target operator who executes the target patrol inspection task, and then determine whether the start processing time is within the scheduled time range. If the start processing time is within the scheduled time range, the electronic device can record the patrol inspection start time of the target patrol inspection task. If the start processing time is later than the preset fault-tolerant end time, the electronic device can record the timeout identifier of the target patrol inspection task; or the electronic device can record the patrol inspection start time of the target patrol inspection task; or the electronic device can record both the timeout identifier of the target patrol inspection task and the patrol inspection start time of the target patrol inspection task. On the basis of the patrol inspection evaluation record of the target patrol inspection task, the specific finish condition of the target patrol inspection task can be traced back, so as to determine whether the time when the target operator starts processing the target patrol inspection task has timed out.

[0063] As one implementation of the embodiment of the present application, as shown in Fig. 3, the above method can further include: S301, during the target operator executing the target patrol inspection task, recording a duration of a preset operation issued by the target operator for a patrol inspection interface; if the duration reaches a preset duration, performing Step S302; if the duration does not reach the preset duration and the target operator is detected to stop the preset operation, performing Step S303.

[0064] After the target operator starts processing the target patrol inspection task, the electronic device can display the patrol inspection interface corresponding to the target patrol inspection task. In the process of the target operator executing the target patrol inspection task, the target operator can issue the preset operation for the patrol inspection interface, and then the electronic device can record the duration of the preset operation issued by the target operator. The preset operation can be pressing patrol inspection interface with a mouse, etc., which is not specifically limited here.

[0065] In order to standardize the preset operation in the target operator executing the target patrol inspection task, a duration threshold of the preset operation can be set in advance as a preset duration. If the duration reaches the preset duration, which means that the preset operation by the target operator meets the standardization requirement, then the electronic device can perform Step S302, so that the target operator issues the operation of patrol inspection end. If the duration does not reach the preset duration and the target operator is detected to stop the preset operation, which means that the preset operation by the target operator does not meet the standardization requirement, then the electronic device can perform Step S303, so that the target operator re-executes the target patrol inspection task.

[0066] S302, displaying a patrol inspection finish identifier, to enable the target operator to issue an operation of patrol inspection end based on the patrol inspection finish identifier.

[0067] If the duration reaches the preset duration, which means that the preset operation issued by the target operator meets the standardization requirement, then the electronic device can display the patrol inspection finish identifier. The target operator can issue the operation of patrol inspection end based on the patrol inspection finish identifier, and then the electronic device can determine that the target patrol inspection task has been finished.

[0068] S303, resetting the duration to zero.

[0069] If the duration does not reach the preset duration, and the electronic device detects that the target operator stops the preset operation, it means that the preset operation by the target operator does not meet the standardization requirement. The electronic device can reset the duration of the preset operation issued by the target operator for the patrol inspection interface to zero. At this time, the task processing terminal does not display the patrol inspection finish identifier, and the target operator cannot issue the operation of patrol inspection end based on the patrol inspection finish identifier. Thus, the target operator can re-issue the preset operation, and the electronic device cannot display the patrol inspection finish identifier until the duration reaches the preset duration.

[0070] For example, the schematic diagram of the patrol inspection interface corresponding to the target patrol inspection task can be shown in Fig. 4, where a patrol inspection window 1, a patrol inspection window 2, a patrol inspection window 3, a patrol inspection window 4, a patrol inspection window 5 and a patrol inspection window 6 can display multiple monitoring images of the target scene acquired by multiple monitoring devices corresponding to the target patrol inspection task, and the progress of the patrol inspection task progress bar can be increased accordingly based on the duration of the preset operation issued by the target operator for the patrol inspection interface. Until the duration reaches the preset duration, the progress of the patrol inspection task progress bar can be full. Then a "patrol inspection finish" button is displayed, and the target operator can issue the operation of patrol inspection end by clicking the "patrol inspection finish" button. The preset operation can be that the target operator controls the mouse to press the patrol inspection interface, and the preset duration can be 15 seconds. In this way, in the process of executing the target patrol inspection task, the target operator can control the mouse to press the patrol inspection interface, and the electronic device can record the duration during which the mouse presses the patrol inspection interface, and display the corresponding progress of the patrol inspection task progress bar in real time. The "patrol inspection finish" button cannot be displayed

until the pressing duration is up to 15 seconds. If the electronic device detects that the mouse stops pressing the patrol inspection interface or the mouse leaves the patrol inspection interface when the pressing duration recorded by the electronic device has not reached 15 seconds, the electronic device can reset the duration to zero and set the progress of the patrol inspection task progress bar to an initial position. The "patrol inspection finish" button cannot be displayed until the target operator controls the mouse again to presses the patrol inspection interface for 15 seconds.

[0071] In this embodiment, the electronic device can record the duration of the preset operation issued by the target operator for the patrol inspection interface in the process of the target operator executing the target patrol inspection task, and does not display the patrol inspection finish identifier until the duration reaches the preset duration, so that the target operator can issue the operation of patrol inspection end based on the patrol inspection finish identifier. Through the above method, the patrol inspection operation of the target operator during video patrol inspection can be effectively standardized.

[0072] As one implementation of the embodiment of the present application, the above method can further include:

when the operation of patrol inspection end issued by the target operator is acquired, updating a processing state in the patrol inspection evaluation record of the target patrol inspection task to a finished state, and recording a patrol inspection end time of the target patrol inspection task; and/or,

when an operation of discontinuing the target patrol inspection task issued by the target operator is acquired, updating the processing state in the patrol inspection evaluation record of the target patrol inspection task to an unfinished state.

[0073] If the electronic device acquires the operation of patrol inspection end issued by the target operator, which means that the duration of the preset operation issued by the target operator for the patrol inspection interface reaches the preset duration, then the electronic device displays a patrol inspection finish identifier, and the target operator issues the operation of patrol inspection end based on the patrol inspection finish identifier. That is, the patrol inspection operation of the target operator meets the standardization requirement of the patrol inspection task, and the electronic device can determine that the target patrol inspection task has been finished, thereby updating the processing state in the patrol inspection evaluation record of the target patrol inspection task to the finished state, and recording the patrol inspection end time of the target patrol inspection task.

[0074] If the electronic device acquires the operation of discontinuing the target patrol inspection task issued by the target operator, which means that the duration of the preset operation issued by the target operator for the patrol inspection interface does not reach the preset duration, then the electronic device does not display the patrol inspection finish identifier, and the target operator has not actually finished the patrol inspection operation, wherein the operation of discontinuing the target patrol inspection task may be that the target operator forcibly closes the patrol inspection interface, and the electronic device can update the processing state in the patrol inspection evaluation record of the target patrol inspection task to the unfinished state. For example, the preset operation is that the target operator controls the mouse to press the patrol inspection interface, and the preset duration can be 15 seconds. If the target operator controls the mouse to stop pressing the patrol inspection interface after controlling the mouse to press the patrol inspection interface for 5 seconds, and closes the patrol inspection interface through a close button on the patrol inspection interface, then the electronic device can update the processing state in the patrol inspection evaluation record of the target patrol inspection task to the unfinished state.

[0075] In this embodiment, the electronic device can update the processing condition in the patrol inspection evaluation record of the target patrol inspection task to the finished state when acquiring the operation of patrol inspection end issued by the target operator based on the patrol inspection finish identifier, and record the patrol inspection end time of the target patrol inspection task; and the electronic device can update the processing state in the patrol inspection evaluation record of the target patrol inspection task to the unfinished state when acquiring the operation of discontinuing the target patrol inspection task issued by the target operator. Through the above method, the patrol inspection operation of the target operator during video patrol inspection can be further standardized, the processing state in the patrol inspection evaluation record of the target patrol inspection task can be accurately updated, and the patrol inspection end time can be recorded, to facilitate tracking back the specific finish condition of the target patrol inspection task later.

[0076] As one implementation of the embodiment of the present application, generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task can include:

updating a processing state in the patrol inspection evaluation record of the target patrol inspection task to a state of missed being processed when it is detected that a current time is later than the preset fault-tolerant end time and the processing condition of the target patrol inspection task is a condition that processing of the target patrol inspection task has not been started.

[0077] If the electronic device detects that the current time is later than the preset fault-tolerant end time and the processing condition of the target patrol inspection task is a condition that processing of the target patrol inspection task

has not been started, it means that no operator has processed the target patrol inspection task within the scheduled time range, i.e., the target patrol inspection task has been missed being processed. When detecting that the current time is later than the preset fault-tolerant end time and the processing condition of the target patrol inspection task is a condition that processing of the target patrol inspection task has not been started, the electronic device can update the processing state in the patrol inspection evaluation record of the target patrol inspection task to the state of missed being processed. For example, the current time is 10: 20 on January 9, 2022, and the scheduled time range of the target patrol inspection task is from 10: 00 to 10: 15 on January 9, 2022. When detecting that the target patrol inspection task has not started to be processed at 10: 20, the electronic device can update the processing state in the patrol inspection evaluation record of the target patrol inspection task to the state of missed being processed, which can be specifically "missed being processed".

[0078] In this embodiment, the electronic device can update the processing state in the patrol inspection evaluation record of the target patrol inspection task to the state of missed being processed when detecting that the current time is later than the preset fault-tolerant end time and the processing condition of the target patrol inspection task is a condition that processing of the target patrol inspection task has not been started. Therefore, the target patrol inspection task missed being processed can be accurately determined according to the patrol inspection evaluation record, to facilitate tracking back the specific finish condition of the target patrol inspection task later.

[0079] Through the above method for generating the patrol inspection evaluation record, the schematic diagram of the acquired patrol inspection evaluation record corresponding to the target patrol inspection task can be shown in Fig. 5, wherein "patrol inspection evaluation record classification" can classify the generated patrol inspection evaluation record based on information such as "finished state" and "target operator", etc., and "query" can query a corresponding patrol inspection evaluation record based on an input condition. Patrol inspection tasks 1, 2, 3, 4 and 5 represent the generated target patrol inspection tasks, wherein the patrol inspection task 5 is a target patrol inspection task to be processed. The scheduled time range is a scheduled time range of the respective target patrol inspection task, and the scheduled time range is from the scheduled start time to the preset fault-tolerant end time. The patrol inspection start time is a patrol inspection start time of the respective target patrol inspection task. A target patrol inspection task that exceeds the preset fault-tolerant end time and has started to be processed can be recorded as "timeout" and the patrol inspection start time of the target patrol inspection task can be recorded. A target patrol inspection task that exceeds the preset fault-tolerant end time and has not started to be processed can be recorded as "missed being processed". The patrol inspection end time is a patrol inspection end time of the respective target patrol inspection task, the finished state is a state indicating whether the respective target patrol inspection task is finished, and the target operator is an identifier of a target operator who executes the respective target patrol inspection task.

[0080] Taking the patrol inspection task 2 as an example, the scheduled time range of the patrol inspection task 2 is from 21: 00 to 21: 15 on May 26, 2021, and the identifier of the target operator who executes the patrol inspection task 2 is A. A starts processing the patrol inspection task 2 at 21: 17 on May 26, 2021 that exceeds the preset fault-tolerant end time. The electronic device records the timeout identifier of the patrol inspection task 2 as "timeout" and records the patrol inspection start time of the patrol inspection task 2. Then, A issues the preset operation for the patrol inspection interface having a duration longer than the preset duration during executing the patrol inspection task 2, and A issues the operation of patrol inspection end based on the patrol inspection finish identifier at 21: 23 on May 26, 2021. The electronic device updates the finish state of the patrol inspection task 2 to the finished state, specifically "finished", and records the patrol inspection end time of the patrol inspection task 2 as 21: 23 on May 26, 2021. The patrol inspection evaluation records of other target patrol inspection tasks in the schematic diagram are similar to those of the patrol inspection task 2, which will not be repeated here.

[0081] As one implementation of the embodiment of the present application, before acquiring the start processing time of the target patrol inspection task, the method can further include:

determining whether another operator is processing the target patrol inspection task when a start processing operation issued by the target operator for the target patrol inspection task is acquired.

[0082] In one implementation, the electronic device can only record an identifier of the first operator who processes the target patrol inspection task, thereby generating only one patrol inspection evaluation record. In another implementation, the electronic device can generate the patrol inspection evaluation record of the target patrol inspection task when each operator processes the target patrol inspection task, so that one target patrol inspection task can correspond to multiple patrol inspection evaluation records for different operators. Since the electronic device can record the identifier of the target operator who executes the patrol inspection task, the electronic device can determine whether another operator is processing the patrol inspection task when acquiring the start processing operation issued by the target operator for the target patrol inspection task.

[0083] In this embodiment, the electronic device can determine whether another operator is processing the target patrol inspection task when acquiring the start processing operation issued by the target operator for the target patrol inspection task, and then can generate the patrol inspection evaluation record of the target patrol inspection task accordingly.

[0084] As one implementation of the embodiment of the present application, if another operator is processing the patrol inspection task, as shown in Fig. 6, the above method can further include:

S601, displaying prompt information.

[0085] If another operator is processing the patrol inspection task, the electronic device can display the prompt information to the target operator, to prompt that the target patrol inspection task is being processed by another operator, and can provide the target operator with an option of whether to continue processing, where for example, the prompt information may be "Operator C is processing the patrol inspection task".

[0086] S602, if an instruction to continue processing the target patrol inspection task issued by the target operator based on the prompt information is acquired, displaying a patrol inspection interface, and acquiring the start processing time of the target patrol inspection task.

[0087] If the electronic device acquires the instruction to continue processing the target patrol inspection task issued by the target operator based on the prompt information, the electronic device can display the patrol inspection interface and acquire the start processing time of the target patrol inspection task. Therefore, the target operator can choose to continue processing the target patrol inspection task and perform a patrol inspection operation. The target operator starts processing the target patrol inspection task, and the electronic device can generate the patrol inspection evaluation record corresponding to the target patrol inspection task. The target operator can also choose not to continue processing the target patrol inspection task, and this patrol inspection operation ends.

[0088] In this embodiment, the electronic device can display the prompt information, display the patrol inspection interface if acquiring the instruction to continue processing the target patrol inspection task issued by the target operator based on the prompt information, and acquire the start processing time of the target patrol inspection task. Therefore, the electronic device can generate the patrol inspection evaluation record for the target operator processing the target patrol inspection task.

[0089] As one implementation of the embodiment of the present application, if no other operator is processing the target patrol inspection task, the above method can further include: determining whether a current time is within the scheduled time range.

[0090] The scheduled time range of the target patrol inspection task is from the scheduled start time to the preset fault-tolerant end time. The current time may have not reached the scheduled start time or may have exceeded the preset fault-tolerant end time, i.e., the current time is not within the scheduled time range. If the current time has not reached the scheduled start time, the target patrol inspection task usually cannot be processed; if the current time has exceeded the preset fault-tolerant end time, it means that the target patrol inspection task has timed out. If the current time is within the scheduled time range, the target operator can normally process the target patrol inspection task.

[0091] In this embodiment, the electronic device can determine whether the current time is within the scheduled time range when no other operator is processing the target patrol inspection task, and then can determine whether the target operator is allowed to start processing the target patrol inspection task based on a relationship between the scheduled time range of the target patrol inspection task and the current time.

[0092] As one implementation of the embodiment of the present application, if the current time is within the scheduled time range, the above method can further include: displaying the patrol inspection interface, and acquiring the start processing time of the target patrol inspection task.

[0093] If the current time is within the scheduled time range of the target patrol inspection task, the electronic device can display the patrol inspection interface to the target operator, and the target operator can start the patrol inspection operation. The electronic device can acquire the start processing time of the target patrol inspection task, and generate the patrol inspection evaluation record of the target patrol inspection task.

[0094] In this embodiment, the electronic device can display the patrol inspection interface and acquire the start processing time of the target patrol inspection task when the current time is within the scheduled time range of the target patrol inspection task. Then, the electronic device can generate the patrol inspection evaluation record of the target patrol inspection task by the target operator.

[0095] As one implementation of the embodiment of the present application, if the current time is prior to the scheduled start time, the above method can further include:

displaying information about a time interval from the current time to the scheduled start time, and acquiring the start processing time of the target patrol inspection task after the current time reaches the scheduled start time.

[0096] The electronic device can calculate the time interval from the current time to the scheduled start time as the information about the time interval from the current time to the scheduled start time, and display the information about the time interval to the target operator. In one implementation, after acquiring the information about the time interval, the target operator can start executing the target patrol inspection task when the current time reaches the scheduled start time.

[0097] Since the target operator may not be able to execute the target patrol inspection task within the scheduled time range, in order to enable the target operator to choose to process the target patrol inspection task in advance, in another implementation, the electronic device can also prompt the target operator whether to start executing the target patrol inspection task. The target operator can start executing the target patrol inspection task in advance, and then the electronic device can record the patrol inspection start time and record that the target operator starts processing the target patrol inspection task prior to the scheduled start time.

[0098] In this embodiment, the electronic device determines whether another operator is processing the target patrol inspection task when acquiring the start processing operation issued by the target operator for the target patrol inspection task, and displays the information about the time interval from the current time to the scheduled start time when the current time is not within the scheduled time range, which facilitates accurately generating the patrol inspection evaluation record corresponding to the target patrol inspection task, and facilitates tracing back the specific finish condition of the target patrol inspection task later.

[0099] As one implementation of the embodiment of the present application, the above method can be applied to the task processing terminal, and acquiring the target patrol inspection task can include:

acquiring the target patrol inspection task generated and sent to the task processing terminal by the patrol inspection server according to a preset patrol inspection schedule, or acquiring the target patrol inspection task triggered and generated by the target operator at the task processing terminal. Alternatively,

the above method can be applied to the patrol inspection server, and acquiring the target patrol inspection task can include:

acquiring the target patrol inspection task generated according to the preset patrol inspection schedule.

[0100] In the solution provided by the embodiment of the present application, the target patrol inspection task can be generated and sent to the task processing terminal by the patrol inspection server according to the preset patrol inspection schedule, so that the operator can process the target patrol inspection task at the task processing terminal. The target patrol inspection task can also be triggered and generated by the target operator at the task processing terminal, and the target operator can also process the target patrol inspection task generated by the task processing terminal. The patrol inspection server can also acquire the target patrol inspection task generated according to the preset patrol inspection schedule, and then can generate the patrol inspection evaluation record of the target patrol inspection task.

[0101] In this embodiment, the target patrol inspection task can be generated and sent to the task processing terminal by the patrol inspection server according to the preset patrol inspection schedule, or the target patrol inspection task can be triggered and generated by the target operator at the task processing terminal. The task processing terminal can acquire the target patrol inspection task. Similarly, the patrol inspection server can also acquire the target patrol inspection task generated according to the preset patrol inspection schedule. The efficiency of generating the target patrol inspection task is higher, and both the patrol inspection server and the task processing terminal can acquire the target patrol inspection task, which further facilitates the processing by the target operator and generation of the patrol inspection evaluation record, so that the specific finish condition of the target patrol inspection task can be traced back later.

[0102] As one implementation of the embodiment of the present application, the above method can further include: sending the target patrol inspection task to the task processing terminal.

[0103] Generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task can include: generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task by the task processing terminal.

[0104] In the solution provided by the embodiment of the present application, the patrol inspection server can send the target patrol inspection task to the task processing terminal, so that the operator at the task processing terminal can process the target patrol inspection task, and the task processing terminal can generate the patrol inspection evaluation record of the target patrol inspection task. The patrol inspection server can also generate the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task by the task processing terminal. Therefore, the patrol inspection evaluation record of the target patrol inspection task can be generated in both the task processing terminal and the patrol inspection server.

[0105] In this embodiment, both the task processing terminal and the patrol inspection server can generate the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task, so that when the specific finish condition of the target patrol inspection task needs to be traced back later, the specific finish condition of the target patrol inspection task can be traced back more accurately based on the patrol inspection evaluation record of the target patrol inspection task.

[0106] As one implementation of the embodiment of the present application, as shown in Fig. 7, the above method can further include: S701, receiving a patrol inspection reminder message corresponding to the target patrol inspection task sent by the patrol inspection server.

[0107] When the target patrol inspection task is generated and sent to the task processing terminal by the patrol inspection server according to the preset patrol inspection schedule, the task processing terminal can receive the patrol

inspection reminder message corresponding to the target patrol inspection task sent by the patrol inspection server. The patrol inspection reminder message can be a notification message including information such as the scheduled time range, the scene and the monitoring device of the target patrol inspection task, which is configured to remind the operator to process the target patrol inspection task.

[0108] S702, displaying a patrol inspection task entry associated with the patrol inspection reminder message.

[0109] The patrol inspection reminder message can be associated with the patrol inspection task entry, so that the task processing terminal can display the patrol inspection task entry associated with the patrol inspection reminder message, which facilitates the operator to start processing the corresponding target patrol inspection task based on the patrol inspection task entry. In one implementation, the task processing terminal can display a corresponding pop-up window based on the patrol inspection reminder message, and the pop-up window can include content of the patrol inspection reminder message and the target patrol inspection task entry, for prompting the operator to start processing the corresponding target patrol inspection task. For example, the pop-up window for the patrol inspection reminder message can be as shown in Fig. 8, wherein the content of the patrol inspection reminder message can include information such as the scheduled time of the target patrol inspection task, which is not specifically limited here. After the current time reaches the scheduled start time, the operator can enter the patrol inspection task entry by clicking the "start patrol inspection" button, and thus can start processing the target patrol inspection task.

[0110] S703, acquiring the start processing operation issued by the target operator based on the patrol inspection task entry.

[0111] When the target operator starts processing the target patrol inspection task on based on the patrol inspection task entry, the task processing terminal can acquire the start processing operation issued based on the patrol inspection task entry, thereby starting generating the patrol inspection evaluation record and updating the processing state in the patrol inspection evaluation record of the target patrol inspection task.

[0112] In this embodiment, the task processing terminal can receive the patrol inspection reminder message corresponding to the target patrol inspection task sent by the patrol inspection server, and display the patrol inspection task entry associated with the patrol inspection reminder message, and further acquire the start processing operation issued by the target operator based on the patrol inspection task entry. The operator can be effectively reminded to finish the target patrol inspection task through the patrol inspection reminder message, and the target patrol inspection task can start to be processed with a single click through the patrol inspection task entry, which is more convenient and faster.

[0113] As one implementation of the embodiment of the present application, as shown in Fig. 9, the above video patrol inspection method can be applied to a patrol inspection server, and the above method can include: S901, generating the target patrol inspection task based on the preset patrol inspection schedule.

[0114] The patrol inspection server can generate the target patrol inspection task based on the preset patrol inspection schedule. In one implementation, the preset patrol inspection schedule can be stored in a database of the patrol inspection server, and the patrol inspection server can regularly inspect the preset patrol inspection schedule according to the preset patrol inspection frequency, and further generates the target patrol inspection task accordingly.

[0115] S902, sending the target patrol inspection task to the task processing terminal.

[0116] The patrol inspection server can send the target patrol inspection task to the task processing terminal.

[0117] S903, generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task by the task processing terminal.

[0118] The operator at the task processing terminal can process the target patrol inspection task, and then the patrol inspection server can generate the patrol inspection record of the target patrol inspection task based on the scheduled time range of the patrol inspection task and the processing condition of the target patrol inspection task by the task processing terminal.

[0119] In this embodiment, the patrol inspection server can generate the target patrol inspection task based on the preset patrol inspection schedule and send the target patrol inspection task to the task processing terminal, and then generate the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the patrol inspection task and the processing condition of the target patrol inspection task by the task processing terminal. By sending the target patrol inspection task to the task processing terminal, and generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task by the task processing terminal, the specific finish condition of the target patrol inspection task can be traced back more accurately later through the patrol inspection evaluation record of the target patrol inspection task generated by the patrol inspection server.

[0120] As one implementation of the embodiment of the present application, the above method can further include: generating the patrol inspection reminder message corresponding to the target patrol inspection task based on a relationship among the current time, the scheduled time range and a preset notification time.

[0121] The patrol inspection reminder message can be a notification message including information such as the scheduled time range, the scene and the monitoring device of the target patrol inspection task. Within a period of time prior

to the scheduled start time of the target patrol inspection task and within the scheduled time range, the patrol inspection server and the task processing terminal can generate the patrol inspection reminder message corresponding to the target patrol inspection task, which is configured to remind the operator to process the target patrol inspection task. After the preset fault-tolerant processing time of the target patrol inspection task, the patrol inspection reminder message may not be generated.

[0122] In one implementation, if the current time is prior to the scheduled start time and too far from the scheduled start time, it may be unnecessary to immediately generate the patrol inspection reminder message to inform the operator. The time for generating the patrol inspection reminder message by the electronic device can be defined by the preset notification time, where the preset notification time can be a time prior to the scheduled start time and can be set according to an importance of the target patrol inspection task, etc., which is not specifically limited here. The electronic device can generate the patrol inspection reminder message between the preset notification time and the scheduled start time as well as within the scheduled time range.

[0123] In one implementation, the electronic device can generate a corresponding target patrol inspection task after determining the patrol inspection reminder message, which is generated for the first time, corresponding to the target patrol inspection task; accordingly, the electronic device can also generate the target patrol inspection task according to the preset time for generating the target patrol inspection task, and acquire the patrol inspection reminder message and the target patrol inspection task, which is not limited here.

[0124] In this embodiment, the electronic device can generate the patrol inspection reminder message corresponding to the target patrol inspection task based on the relationship among the current time, the scheduled time range and the preset notification time, thereby effectively reminding the operator to process the target patrol inspection task.

[0125] As one implementation of the embodiment of the present application, as shown in Fig. 10, generating the patrol inspection reminder message corresponding to the target patrol inspection task based on the relationship among the current time, the scheduled time range and the preset notification time can include: S1001, regularly querying the scheduled time range of the target patrol inspection task included in the preset patrol inspection schedule; if the current time is between the preset notification time and the scheduled start time, performing Step S1002; if the current time is within the scheduled time range, performing Step S1003.

[0126] The electronic device can regularly query the scheduled time range of the target patrol inspection task included in the preset patrol inspection schedule, and generate a corresponding reminder notification based on the current time, the preset notification time and the scheduled time range. The frequency at which the electronic device regularly queries the scheduled time range of the target patrol inspection task can be set according to the computing power of the electronic device, etc., for example, the scheduled time range can be queried every 3 minutes, 5 minutes, 10 minutes, etc., which is not specifically limited here.

[0127] If the current time is between the preset notification time and the scheduled start time, and has not reached the start processing time of the corresponding target patrol inspection task, the electronic device can perform Step S1002 to generate the patrol inspection reminder message corresponding to the target patrol inspection task; if the current time is within the scheduled time range, i.e., has reached the start processing time of the corresponding target patrol inspection task and has not reached the preset fault-tolerant end time, the electronic device can perform Step S1003 to generate the patrol inspection reminder message corresponding to the target patrol inspection task.

[0128] S1002, generating a first reminder notification.

[0129] Wherein, the first reminder notification carries a duration from the current time to the scheduled start time.

[0130] When the current time is between the preset notification time and the scheduled start time, and has not yet reached the start processing time of the corresponding patrol inspection task, the electronic device can calculate the duration from the current time to the scheduled start time, and generate the first reminder notification carried with the duration. For example, if the current time is 5: 30, the preset notification time is 5: 00, and the scheduled start time is 5: 35, then the duration from the current time to the scheduled start time is 5 minutes, and content of the first reminder notification can include "There are 5 minutes left before the scheduled start time of the target patrol inspection task, please schedule a time to process it".

[0131] S1003, generating a second reminder notification.

[0132] Wherein, the second reminder notification carries a duration from the current time to the preset fault-tolerant end time.

[0133] When the current time is within the scheduled time range, i.e., has reached the scheduled start time of the corresponding target patrol inspection task and has not yet reached the preset fault-tolerant end time, the electronic device can calculate the duration from the current time to the preset fault-tolerant end time, and generate the second reminder notification carried with the duration. For example, if the current time is 5: 40, the scheduled start time is 5: 35, and the preset fault-tolerant end time is 5: 50, then the duration from the current time to the preset fault-tolerant end time is 10 minutes, and content of the second reminder notification can include "There are 10 minutes left before the fault-tolerant end time of the target patrol inspection task, please process it as soon as possible".

[0134] In this embodiment, the electronic device can regularly query the scheduled time range of the target patrol

inspection task included in the preset patrol inspection schedule, and generate the corresponding reminder notification based on the current time, the preset notification time and the scheduled time range. The operator can be reminded in advance to schedule a time to process the target patrol inspection task. Accordingly, the operator can also be reminded of the duration from the current time to the preset fault-tolerant end time of the target patrol inspection task, thereby effectively reminding the operator to finish the target patrol inspection task, which further facilitates tracking back the specific finish condition of the target patrol inspection task.

[0135] As one implementation of the embodiment of the present application, generating the patrol inspection reminder message corresponding to the target patrol inspection task based on the relationship among the current time, the scheduled time range and the preset notification time can include:

generating the patrol inspection reminder message corresponding to the target patrol inspection task at a preset frequency, and/or, generating the patrol inspection reminder message corresponding to the target patrol inspection task at a preset last notification time point.

[0136] In one case, the electronic device can generate the patrol inspection reminder message corresponding to the target patrol inspection task according to the preset frequency, which can be set according to the calculating power of the electronic device and so on. In this way, multiple patrol inspection reminder messages can be continuously generated between the preset notification time and the preset fault-tolerant end time to remind the operator for many times. In another case, the electronic device can also generate the patrol inspection reminder message corresponding to the target patrol inspection task at the preset last notification time point, so that the electronic device can focus on reminding the operator at the preset last notification time point. In yet another case, the electronic device can generate the patrol inspection reminder message corresponding to the target patrol inspection task both at the preset frequency and at the preset last notification time point.

[0137] In this embodiment, the electronic device can generate the patrol inspection reminder message corresponding to the target patrol inspection task according to the preset frequency, or generate the patrol inspection reminder message corresponding to the target patrol inspection task at the preset last notification time point, or can generate the patrol inspection reminder message corresponding to the target patrol inspection task both at the preset frequency and at the preset last notification time point. The operator can be better reminded to process the target patrol inspection task by combining multiple reminders with focused reminders.

[0138] As one implementation of the embodiment of the present application, as shown in Fig. 11, generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task by the task processing terminal can include: S1101, determining the processing condition of the target patrol inspection task if the current time is later than the preset fault-tolerant end time and the time interval between the current time and the preset fault-tolerant end time is not greater than a preset value.

[0139] When the patrol inspection server determines that the current time is later than the preset fault-tolerant end time and the time interval between the current time and the preset fault-tolerant end time is not greater than the preset value, which means that the current time is later than the preset fault-tolerant end time of the target patrol inspection task, the patrol inspection server can determine the processing condition of the target patrol inspection task. Since the patrol inspection server can regularly query the scheduled time range of the target patrol inspection task included in the preset patrol inspection schedule, the number of times that the patrol inspection server determines the processing condition of the target patrol inspection task after the preset fault-tolerant end time can be controlled by changing the size of the preset value. The size of the preset value can be set according to the actual needs. For example, a time interval at which the patrol inspection server performs the regular query is 10 minutes, and the preset value is also 10 minutes. Within 10 minutes after the fault-tolerant end time of the target patrol inspection task, when the patrol inspection server determines for the first time that the current time is later than the preset fault-tolerant end time and the time interval between the current time and the preset fault-tolerant end time is not more than the preset value of 10 minutes, the patrol inspection server determines the processing condition of the target patrol inspection task. When the preset value is 30 minutes, within 30 minutes after the fault-tolerant end time of the target patrol inspection task, the patrol inspection server can determine for many times that the current time is later than the preset fault-tolerant end time and the time interval between the current time and the preset fault-tolerant end time is not more than 30 minutes, and then determine the processing condition of the target patrol inspection task for many times.

[0140] S1102, updating the processing state in the patrol inspection evaluation record of the target patrol inspection task to the state of missed being processed if the processing condition of the target patrol inspection task is a condition in which the target patrol inspection task has not been processed by the task processing terminal.

[0141] If the patrol inspection server determines that the processing condition of the target patrol inspection task is a condition in which the target patrol inspection task was not processed by the task processing terminal, which means that no operator has processed the target patrol inspection task within the scheduled time range, i.e., the target patrol inspection task has been missed being processed, then the patrol inspection server can update the processing state of the target patrol inspection task to the state of missed being processed. For example, the current time is 10: 20 on January 9, 2022,

the preset fault-tolerant end time of the target patrol inspection task is 10: 15 on January 9, 2022, and the preset value is 10 minutes. The time interval between the current time and the preset fault-tolerant end time is 5 minutes, which is not greater than the preset value. The patrol inspection server acquires that the target patrol inspection task has not started to be processed, and can update the processing state in the patrol inspection evaluation record of the target patrol inspection task to the miss processing state, which can be specifically "missed being processed".

[0142] In this embodiment, the patrol inspection server can determine the processing condition of the target patrol inspection task when the current time is later than the preset fault-tolerant end time and the time interval between the current time and the preset fault-tolerant end time is not greater than the preset value, and update the processing state in the patrol inspection evaluation record of the target patrol inspection task to the state of missed being processed when determining that the processing condition of the target patrol inspection task is a condition in which the target patrol inspection task was not processed by the task processing terminal. Therefore, the target patrol inspection task missed being processed can be accurately determined, which facilitates tracking back the specific finish condition of the target patrol inspection task later.

[0143] A schematic flow chart for sending a patrol inspection reminder message by applying an embodiment of the present application can be as shown in Fig. 12, which can include the following Steps A1-A6:
Step A1, start.

[0144] Step A2, regularly inspecting a preset patrol inspection schedule by a patrol inspection server.

[0145] The patrol inspection server can regularly inspect the preset patrol inspection schedule, that is, regularly query the scheduled time range of the target patrol inspection task included in the preset patrol inspection schedule.

[0146] Step A3, determining a time relationship.

[0147] The patrol inspection server can determine the time relationship, specifically determine a relationship among a current time, a preset notification time and the scheduled time range.

[0148] Step A4, sending the first reminder notification.

[0149] The patrol inspection server can send the first reminder notification to a task processing terminal when determining that the current time is between the preset notification time and the scheduled start time.

[0150] Step A5: sending the second reminder notification.

[0151] The patrol inspection server can send the second reminder notification to the task processing terminal when determining that the current time is within the scheduled time range.

[0152] Step A6, end.

[0153] A schematic flow chart for generating a patrol inspection evaluation record by applying an embodiment of the present application can be as shown in Fig. 13, which can include the following Steps B1-B10:
Step B1, start.

[0154] Step B2, regularly inspecting a preset patrol inspection schedule by a patrol inspection server.

[0155] The patrol inspection server can regularly inspect the preset patrol inspection schedule, that is, regularly query the scheduled time range of the target patrol inspection task included in the preset patrol inspection schedule.

[0156] Step B3, determining a time relationship.

[0157] The patrol inspection server can determine the time relationship, specifically determine a relationship among a current time, a preset notification time and the scheduled time range.

[0158] Step B4, generating the patrol inspection reminder message.

[0159] The patrol inspection server can generate the patrol inspection reminder message when determining that the current time is between the preset notification time and the scheduled start time, or the current time is within the scheduled time range.

[0160] Step B5, determining whether the target patrol inspection task has been generated.

[0161] The patrol inspection server can determine whether the target patrol inspection task corresponding to the patrol inspection reminder message has been generated.

[0162] Step B6, generating the target patrol inspection task.

[0163] The patrol inspection server can generate the target patrol inspection task corresponding to the preset patrol inspection schedule when determining that the target patrol inspection task corresponding to the patrol inspection reminder message has not been generated.

[0164] Step B7, determining whether a time condition is met.

[0165] The patrol inspection server can determine whether the time interval between the current time and the preset fault-tolerant end time is not greater than the preset value, i.e., whether the time condition is met when determining that the current time is later than the preset fault-tolerant end time.

[0166] Step B8: determining whether the target patrol inspection task has not been processed.

[0167] The patrol inspection server can determine whether the target patrol inspection task has not been processed when determining that the current time meets the time condition.

[0168] Step B9, updating the patrol inspection evaluation record.

[0169] When determining that the target patrol inspection task has not been processed, the patrol inspection server can

update the patrol inspection evaluation record of the target patrol inspection task, i.e., update the processing state in the patrol inspection evaluation record of the target patrol inspection task to a state of missed being processed.

[0170] Step B 10, end.

[0171] A schematic flow chart for processing a target patrol inspection task by applying an embodiment of the present application, which can include the following Steps C1-C9:

Step C1, start.

[0172] Step C2, determining a trigger mode.

[0173] The task processing terminal can determine the mode in which the operator triggers the target patrol inspection task, including triggering the target patrol inspection task by the patrol inspection reminder message sent by the patrol inspection server or manually triggering the target patrol inspection task by the operator at the task processing terminal.

[0174] Step C3, determining whether another operator is processing the target patrol inspection task.

[0175] The task processing terminal can determine whether another operator is processing the target patrol inspection task.

[0176] Step C4, determining whether a current time is within the scheduled time range.

[0177] The task processing terminal can determine whether the current time is within the scheduled time range of the target patrol inspection task when determining that no other operator is processing the target patrol inspection task.

[0178] Step C5, displaying information about the time interval from the current time to the scheduled start time.

[0179] The task processing terminal can display the information about the time interval between the current time and the scheduled start time when determining that the current time is not within the scheduled time range of the target patrol inspection task, i.e., the current time is prior to the scheduled start time.

[0180] Step C6, starting processing the target patrol inspection task.

[0181] When the task processing terminal determines that the current time is within the scheduled time range of the target patrol inspection task, or when the task processing terminal determines that another operator is processing the target patrol inspection task and the target operator chooses to continue processing the target patrol inspection task, the task processing terminal can start processing the target patrol inspection task, i.e., display the patrol inspection interface to the target operator and acquire the start processing time of the target patrol inspection task.

[0182] Step C7, displaying prompt information.

[0183] The task processing terminal can display the prompt information to the target operator when determining that another operator is processing the target patrol inspection task.

[0184] Step C8, determining whether to continue processing.

[0185] The task processing terminal can determine whether the target operator chooses to continue processing the target patrol inspection task.

[0186] Step C9, end.

[0187] Corresponding to the above video patrol inspection method, an embodiment of the present application provides a video patrol inspection apparatus, which is described below.

[0188] As shown in Fig. 15, the video patrol inspection apparatus includes:

a target patrol inspection task acquiring module 1501, configured for acquiring a target patrol inspection task;

a patrol inspection evaluation record generating module 1502, configured for generating a patrol inspection evaluation record of the target patrol inspection task based on a scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task.

[0189] It can be seen that, in the solution provided by the embodiment of the present application, the target patrol inspection task can be acquired, and the patrol inspection evaluation record of the target patrol inspection task can be generated based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task. Since the patrol inspection evaluation record of the target patrol inspection task further can be generated by acquiring a preset scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task after the target patrol inspection task is acquired, not only can the target patrol inspection task be executed, but also the patrol inspection evaluation record of the target patrol inspection task can be generated. Thus, when a specific finish condition of the target patrol inspection task needs to be traced back later, the specific finish condition of the target patrol inspection task can be traced back based on the patrol inspection evaluation record of the target patrol inspection task.

[0190] As one implementation of the embodiment of the present application, the above patrol inspection evaluation record generating module 1502 can include:

an identifier recording unit, configured for acquiring a start processing time of the target patrol inspection task, and recording an identifier of a target operator who executes the target patrol inspection task;

a start recording unit, configured for recording a patrol inspection start time of the target patrol inspection task if the start processing time is within the scheduled time range, wherein the scheduled time range is from a scheduled start time to a preset fault-tolerant end time; and/or,

5 recording a timeout identifier of the target patrol inspection task, and/or, recording the patrol inspection start time of the target patrol inspection task if the start processing time is later than the preset fault-tolerant end time.

[0191] As one implementation of the embodiment of the present application, the above apparatus can further include:

10 a duration recording unit, configured for recording a duration of a preset operation issued by the target operator for a patrol inspection interface during the target operator executing the target patrol inspection task;

a first operation recording unit, configured for displaying a patrol inspection finish identifier if the duration reaches a preset duration, to enable the target operator to issue an operation of patrol inspection end based on the patrol inspection finish identifier;

15

a second operation recording unit, configured for resetting the duration to zero if the duration does not reach the preset duration and the target operator is detected to stop the preset operation.

20 **[0192]** As one implementation of the embodiment of the present application, the above apparatus can further include:

an end recording unit, configured for, when the operation of patrol inspection end issued by the target operator is acquired, updating a processing state in the patrol inspection evaluation record of the target patrol inspection task to a finished state, and recording a patrol inspection end time of the target patrol inspection task; and/or,

25

when an operation of discontinuing the target patrol inspection task issued by the target operator is acquired, updating the processing state in the patrol inspection evaluation record of the target patrol inspection task to an unfinished state.

[0193] As one implementation of the embodiment of the present application, the patrol inspection evaluation record generating module 1502 can include:

30

a missed-being-processed recording unit, configured for updating a processing state in the patrol inspection evaluation record of the target patrol inspection task to a state of missed being processed when it is detected that a current time is later than the preset fault-tolerant end time and the processing condition of the target patrol inspection task is a condition that processing of the target patrol inspection task has not been started.

35 **[0194]** As one implementation of the embodiment of the present application, the above apparatus can further include: a first determining unit, configured for determining whether another operator is processing the target patrol inspection task when a start processing operation issued by the target operator for the target patrol inspection task is detected before acquiring the start processing time of the target patrol inspection task.

[0195] As one implementation of the embodiment of the present application, the above apparatus can further include:

40

a first display unit, configured for displaying prompt information if another operator is processing the target patrol inspection task;

45 a second display unit, configured for, if an instruction to continue processing the target patrol inspection task issued by the target operator based on the prompt information is acquired, displaying a patrol inspection interface, and acquiring the start processing time of the target patrol inspection task.

[0196] As one implementation of the embodiment of the present application, the above apparatus can further include: a second determining unit, configured for determining whether a current time is within the scheduled time range if no other operator is processing the target patrol inspection task.

50

[0197] As one implementation of the embodiment of the present application, the above apparatus can further include: a third display unit, configured for displaying the patrol inspection interface and acquiring the start processing time of the target patrol inspection task if the current time is within the scheduled time range.

[0198] As one implementation of the embodiment of the present application, the above apparatus can further include: a fourth display unit, configured for, if the current time is prior to the scheduled start time, displaying information about a time interval from the current time to the scheduled start time, and acquiring the start processing time of the target patrol inspection task after the current time reaches the scheduled start time.

55

[0199] As one implementation of the embodiment of the present application, the above apparatus can be applied to a

task processing terminal, and the above target patrol inspection task acquiring module 1501 can include:

a first acquiring unit, configured for acquiring a target patrol inspection task generated and sent to the task processing terminal by the patrol inspection server according to a preset patrol inspection schedule, or acquiring a target patrol inspection task triggered and generated by the target operator at the task processing terminal; or,

the above apparatus can be applied to a patrol inspection server, and the above target patrol inspection task acquiring module can include:

a second acquiring unit, configured for acquiring the target patrol inspection task generated according to the preset patrol inspection schedule.

[0200] As one implementation of the embodiment of the present application, the above apparatus can further include:

a sending module, configured for sending the target patrol inspection task to the task processing terminal;

the above patrol inspection evaluation record generating module 1502 can include:

a patrol inspection evaluation record generating unit, configured for generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task by the task processing terminal.

[0201] As one implementation of the embodiment of the present application, the above apparatus can further include: a patrol inspection reminder message generating module, configured for generating a patrol inspection reminder message corresponding to the target patrol inspection task based on a relationship among the current time, the scheduled time range and the preset notification time.

[0202] As one implementation of the embodiment of the present application, the above patrol inspection reminder message generating module can include:

a patrol inspection schedule querying unit, configured for regularly querying the scheduled time range of the target patrol inspection task included in the preset patrol inspection schedule;

a first reminder notification generating unit, configured for generating a first reminder notification if the current time is between the preset notification time and the scheduled start time, wherein the first reminder notification carries a duration from the current time to the scheduled start time;

a second reminder notification generating unit, configured for generating a second reminder notification if the current time is within the scheduled time range, wherein the second reminder notification carries a duration from the current time to the fault-tolerant end time.

[0203] Corresponding to the above video patrol inspection method, an embodiment of the present application further provides a video patrol inspection system, which is described below.

[0204] As shown in Fig. 16, the video patrol inspection system includes a task processing terminal 1601 and a patrol inspection server 1602, wherein:

the task processing terminal 1601 is configured for receiving a target patrol inspection task generated and sent by the patrol inspection server 1602 according to a preset patrol inspection schedule; or, acquiring a target patrol inspection task triggered and generated by a target operator; and generating a patrol inspection record of the target patrol inspection task based on a scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task;

the patrol inspection server 1602 is configured for generating the target patrol inspection task according to the preset patrol inspection schedule and send the target patrol inspection task to the task processing terminal 1601;

the patrol inspection server 1602 is further configured for generating the patrol inspection record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task by the task processing terminal 1601.

[0205] In can be seen that, in the solution provided by the embodiment of the present application, the patrol inspection server can generate the target patrol inspection task and send the target patrol inspection task to the task processing

terminal based on the preset patrol inspection schedule. The task processing terminal can receive the target patrol inspection task, and generate the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task. The patrol inspection server can generate the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task by the task processing terminal. Therefore, the specific finish condition of the target patrol inspection task can be traced back later.

[0206] The target patrol inspection task can be generated by the patrol inspection server 1602 according to the preset patrol inspection schedule or be triggered and generated by the operator at the task processing terminal 1601. The task processing terminal 1601 can acquire the target patrol inspection task, and generate the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task.

[0207] In one implementation, the task processing terminal 1601 can report the patrol inspection evaluation record of the target patrol inspection task to the patrol inspection server 1602, so that the patrol inspection server 1602 can determine the patrol inspection evaluation record reported by the task processing terminal 1601 and store it in the patrol inspection server 1602.

[0208] In another implementation, the patrol inspection server 1602 can also acquire the processing condition of the target patrol inspection task by the task processing terminal 1601, and generate the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task by the task processing terminal 1601.

[0209] In this embodiment, both the task processing terminal 1601 and the patrol inspection server 1602 of the video patrol inspection system can generate the patrol inspection evaluation record of the target patrol inspection task. The patrol inspection server 1602 can determine the patrol inspection evaluation record reported by the task processing terminal 1601 and store it in the patrol inspection server 1602. The patrol inspection evaluation record in the video patrol inspection system is more accurate, which facilitates tracking back the specific finish condition of the target patrol inspection task later.

[0210] As one implementation of the embodiment of the present application, the above patrol inspection server 1602 can be specifically configured for determining the processing condition of the target patrol inspection task if the current time is later than the preset fault-tolerant end time and the time interval between the current time and the preset fault-tolerant end time is not greater than the preset value; updating the processing state in the patrol inspection evaluation record of the target patrol inspection task to the state of missed being processed if the processing condition of the target patrol inspection task is a condition in which the target patrol inspection task was not processed by the task processing terminal 1601.

[0211] An embodiment of the present application further provides an electronic device including a processor and a memory, wherein the memory is configured for storing a computer program; the processor is configured for carrying out steps of the method described in any of the above embodiments when executing the program stored in the memory.

[0212] An embodiment of the present application further provides an electronic device, which can be a task processing terminal or a patrol inspection server; as shown in Fig. 17, the electronic device includes a processor 1701, a communication interface 1702, a memory 1703 and a communication bus 1704, wherein, the processor 1701, the communication interface 1702 and the memory 1703 communicate with each other through the communication bus 1704,

the memory 1703 is configured for storing a computer program;

the processor 1701 is configured for carrying out steps of the method described in the video patrol inspection method embodiment when executing the program stored in the memory 1703.

[0213] The communication bus mentioned in the above-mentioned electronic device can be a Peripheral Component Interconnect (PCI) bus or an Extended Industry Standard Architecture (EISA) bus, and the like. The communication bus can be divided into an address bus, a data bus, a control bus, and the like. For ease of presentation, only one thick line is used in the Figure, but it does not mean that there is only one bus or one type of bus.

[0214] The communication interface is configured for communication between the above electronic device and other devices.

[0215] The memory can include a Random Access Memory (RAM), and can also include a Non-Volatile Memory (NVM), such as at least one magnetic disk memory. Optionally, the memory can also be at least one storage device located away from the aforementioned processor.

[0216] The above-mentioned processor can be a general-purpose processor, including a Central Processing unit (CPU), a Network Processor (NP), etc.; it can also be a Digital Signal Processor (DSP), an Application Specific Integrated Circuit (ASIC), a Field-Programmable Gate Array (FPGA) or other programmable logic devices, discrete gate or transistor

logic devices, discrete hardware components.

[0217] In yet another embodiment provided by the present application, a computer-readable storage medium is further provided, which has a computer program stored therein, wherein the computer program when executed by a processor, carries out the steps of the method described in any of the above embodiments.

[0218] In yet another embodiment provided by the present application, a computer program product containing instructions is further provided, which when running on a computer, causes the computer to carry out the steps of the method described in any of the above embodiments.

[0219] In the above embodiments, it can be implemented in whole or in part by software, hardware, firmware or any combination thereof. When implemented in software, it can be implemented in whole or in part in the form of a computer program product. The computer program product includes one or more computer instructions. When the computer program instructions are loaded and executed on a computer, the processes or functions described in the embodiments of the present application are generated in whole or in part. The computer can be a general purpose computer, special purpose computer, computer network, or other programmable devices. The computer instructions can be stored in a computer readable storage medium or transmitted from one computer readable storage medium to another computer readable storage medium, for example, the computer instructions can be transmitted from a website, computer, server or data center to another website, computer, server, or data center by wire (such as coaxial cable, fiber optic, digital subscriber line (DSL)) or wirelessly (such as infrared, wireless, microwave, etc.). The computer-readable storage medium can be any available medium that can be accessed by a computer or a data storage device such as a server and a data center and the like that includes an integration of one or more available medium. The available medium can be magnetic media (such as a floppy disk, a hard disk, a magnetic tape), optical media (such as DVD) and the like.

[0220] It should be noted that relational terms such as first and second herein are only used to distinguish one entity or operation from another, and do not necessarily require or imply any such actual relationship or order between these entities or operations. Moreover, the terms "comprising", "including" or any other variations thereof are intended to encompass a non-exclusive inclusion such that a process, method, article or device that includes a series of elements includes not only those elements, but also other elements that are not explicitly listed, or includes other elements inherent in such a process, method, article or device. Without further limitation, the elements limited by the statement "including one..." do not exclude the presence of other additional identical elements in the process, method, article or device that includes the mentioned elements.

[0221] The various embodiments in this specification are described in a related manner, and the same and similar parts between the various embodiments can be referred to each other, and each embodiment focuses on the differences from other embodiments. Especially, for the embodiments of the apparatus, the video patrol inspection system, the electronic device, the computer-readable storage medium and the computer program product, the description is relatively simple since it is basically similar to the embodiments of the method, and the relevant points can be referred to the partial description of the embodiments of the method.

[0222] The above descriptions are only preferred embodiments of the present application, and are not intended to limit the present application. Any modifications, equivalent replacements, improvements and the like made within the spirit and principles of the present application shall be included within the scope of protection of the present application.

Claims

1. A video patrol inspection method, comprising:

acquiring a target patrol inspection task;

generating a patrol inspection evaluation record of the target patrol inspection task based on a scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task.

2. The method according to claim 1, wherein generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task comprises:

acquiring a start processing time of the target patrol inspection task, and recording an identifier of a target operator who executes the target patrol inspection task;

recording a patrol inspection start time of the target patrol inspection task if the start processing time is within the scheduled time range, wherein the scheduled time range is from a scheduled start time to a preset fault-tolerant end time; and/or,

recording a timeout identifier of the target patrol inspection task and/or recording a patrol inspection start time of the target patrol inspection task if the start processing time is later than the preset fault-tolerant end time.

3. The method according to claim 2, wherein the method further comprises:

recording a duration of a preset operation issued by the target operator for a patrol inspection interface during the target operator executing the target patrol inspection task;
 displaying a patrol inspection finish identifier if the duration reaches a preset duration, to enable the target operator to issue an operation of patrol inspection end based on the patrol inspection finish identifier;
 resetting the duration to zero if the duration does not reach the preset duration and the target operator is detected to stop the preset operation.

4. The method according to claim 2, wherein the method further comprises:

when an operation of patrol inspection end issued by the target operator is acquired, updating a processing state in the patrol inspection evaluation record of the target patrol inspection task to a finished state, and recording a patrol inspection end time of the target patrol inspection task; and/or,
 when an operation of discontinuing the target patrol inspection task issued by the target operator is acquired, updating the processing state in the patrol inspection evaluation record of the target patrol inspection task to an unfinished state.

5. The method according to claim 1, wherein generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task comprises:

updating a processing state in the patrol inspection evaluation record of the target patrol inspection task to a state of missed being processed when it is detected that a current time is later than a preset fault-tolerant end time and the processing condition of the target patrol inspection task is a condition that processing of the target patrol inspection task has not been started.

6. The method according to claim 2, wherein before acquiring the start processing time of the target patrol inspection task, the method further comprises:

determining whether another operator is processing the target patrol inspection task when a start processing operation issued by the target operator for the target patrol inspection task is acquired;
 displaying prompt information if another operator is processing the target patrol inspection task;
 if an instruction to continue processing the target patrol inspection task issued by the target operator based on the prompt information is acquired, displaying a patrol inspection interface, and acquiring the start processing time of the target patrol inspection task;
 determining whether a current time is within the scheduled time range if no other operator is processing the target patrol inspection task;
 if the current time is within the scheduled time range, displaying the patrol inspection interface, and acquiring the start processing time of the target patrol inspection task;
 if the current time is prior to the scheduled start time, displaying information about a time interval from the current time to the scheduled start time, and acquiring the start processing time of the target patrol inspection task after the current time reaches the scheduled start time.

7. The method according to any one of claims 1 to 6, wherein,

the method is applied to a task processing terminal, and acquiring the target patrol inspection task comprises:

acquiring the target patrol inspection task generated and sent to the task processing terminal by a patrol inspection server according to a preset patrol inspection schedule, or acquiring the target patrol inspection task triggered and generated by the target operator at the task processing terminal; or,
 the method is applied to a patrol inspection server, and acquiring the target patrol inspection task comprises:

acquiring the target patrol inspection task generated according to the preset patrol inspection schedule;
 wherein the method further comprises:

sending the target patrol inspection task to the task processing terminal;
 wherein generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and the processing condition of the target patrol inspection task comprises:

generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task by the task processing terminal.

8. The method according to any one of claims 1 to 6, wherein the method further comprises:

generating a patrol inspection reminder message corresponding to the target patrol inspection task based on a relationship among a current time, the scheduled time range and a preset notification time;
wherein generating the patrol inspection reminder message corresponding to the target patrol inspection task based on the relationship among the current time, the scheduled time range and the preset notification time comprises:

regularly querying the scheduled time range of the target patrol inspection task comprised in a preset patrol inspection schedule;

generating a first reminder notification if the current time is between the preset notification time and a scheduled start time, wherein the first reminder notification carries a duration from the current time to the scheduled start time;

generating a second reminder notification if the current time is within the scheduled time range, wherein the second reminder notification carries a duration from the current time to a preset fault-tolerant end time.

9. A video patrol inspection apparatus, comprising:

a target patrol inspection task acquiring module, configured for acquiring a target patrol inspection task;
a patrol inspection evaluation record generating module, configured for generating a patrol inspection evaluation record of the target patrol inspection task based on a scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task.

10. The apparatus according to claim 9, wherein the patrol inspection evaluation record generating module comprises:

an identifier recording unit, configured for acquiring a start processing time of the target patrol inspection task, and recording an identifier of a target operator who executes the target patrol inspection task;
a start recording unit, configured for recording a patrol inspection start time of the target patrol inspection task if the start processing time is within the scheduled time range, wherein the scheduled time range is from a scheduled start time to a preset fault-tolerant end time; and/or,
recording a timeout identifier of the target patrol inspection task and/or recording a patrol inspection start time of the target patrol inspection task if the start processing time is later than the preset fault-tolerant end time;
wherein the apparatus further comprises:

a duration recording unit, configured for recording a duration of a preset operation issued by the target operator for a patrol inspection interface during the target operator executing the target patrol inspection task;
a first operation recording unit, configured for displaying a patrol inspection finish identifier if the duration reaches a preset duration, to enable the target operator to issue an operation of patrol inspection end based on the patrol inspection finish identifier;

a second operation recording unit, configured for resetting the duration to zero if the duration does not reach the preset duration and the target operator is detected to stop the preset operation;
wherein the apparatus further comprises:

an end recording unit, configured for, when an operation of patrol inspection end issued by the target operator is acquired, updating a processing state in the patrol inspection evaluation record of the target patrol inspection task to a finished state, and recording a patrol inspection end time of the target patrol inspection task; and/or,

when an operation of discontinuing the target patrol inspection task issued by the target operator is acquired, updating the processing state in the patrol inspection evaluation record of the target patrol inspection task to an unfinished state;

wherein the patrol inspection evaluation record generating module comprises:

a missed-being-processed recording unit, configured for updating a processing state in the patrol inspection evaluation record of the target patrol inspection task to a state of missed being processed

when it is detected that a current time is later than the preset fault-tolerant end time and the processing condition of the target patrol inspection task is a condition that processing of the target patrol inspection task has not been started;
 wherein the apparatus further comprises:

a first determining unit, configured for determining whether another operator is processing the target patrol inspection task when a start processing operation issued by the target operator for the target patrol inspection task is acquired before acquiring the start processing time of the target patrol inspection task;

a first display unit, configured for displaying prompt information if another operator is processing the target patrol inspection task;

a second display unit, configured for, if an instruction to continue processing the target patrol inspection task issued by the target operator based on the prompt information is acquired, displaying a patrol inspection interface, and acquiring the start processing time of the target patrol inspection task;

a second determination unit, configured for determining whether a current time is within the scheduled time range if no other operator is processing the target patrol inspection task;

a third display unit, configured for, if the current time is within the scheduled time range, displaying the patrol inspection interface, and acquiring the start processing time of the target patrol inspection task;

a fourth display unit, configured for, if the current time is prior to the scheduled start time, displaying information about a time interval from the current time to the scheduled start time, and acquiring the start processing time of the target patrol inspection task after the current time reaches the scheduled start time;

wherein the apparatus is applied to a task processing terminal, and the target patrol inspection task acquiring module comprises:

a first acquiring unit, configured for acquiring the target patrol inspection task generated and sent to the task processing terminal by a patrol inspection server according to a preset patrol inspection schedule, or acquiring the target patrol inspection task triggered and generated by the target operator at the task processing terminal; or,
 the apparatus is applied to a patrol inspection server, and the target patrol inspection task acquiring module comprises:

a second acquiring unit, configured for acquiring the target patrol inspection task generated according to the preset patrol inspection schedule;
 wherein the apparatus further comprises:

a sending module, configured for sending the target patrol inspection task to the task processing terminal;
 wherein the patrol inspection evaluation record generating module comprises:

a patrol inspection evaluation record generating unit, configured for generating the patrol inspection evaluation record of the target patrol inspection task based on the scheduled time range of the target patrol inspection task and a processing condition of the target patrol inspection task by the task processing terminal;
 wherein the apparatus further comprises:

a patrol inspection reminder message generating module, configured for generating a patrol inspection reminder message corresponding to the target patrol inspection task based on a relationship among the current time, the scheduled time range and a preset notification time;
 wherein the patrol inspection reminder message generating module comprises:

a patrol inspection schedule querying unit, configured for regularly querying the scheduled time range of the target patrol inspection task

comprised in the preset patrol inspection schedule;
a first reminder notification generating unit, configured for generating
a first reminder notification if the current time is between the preset
notification time and the scheduled start time, wherein the first
reminder notification carries a duration from the current time to
the scheduled start time;
a second reminder notification generating unit, configured for gen-
erating a second reminder notification if the current time is within the
scheduled time range, wherein the second reminder notification
carries a duration from the current time to the preset fault-tolerant
end time.

11. An electronic device, comprising a processor and a memory, wherein the memory is configured for storing a computer program; and
the processor is configured for carrying out the method according to any one of claims 1 to 8 when executing the program stored in the memory.
12. A computer program product containing instructions, which when running on a computer, causes the computer to carry out the method according to any one of claims 1 to 8.
13. A computer-readable storage medium having a computer program stored therein, wherein the computer program, when executed by a processor, carries out the method according to any one of claims 1 to 8.

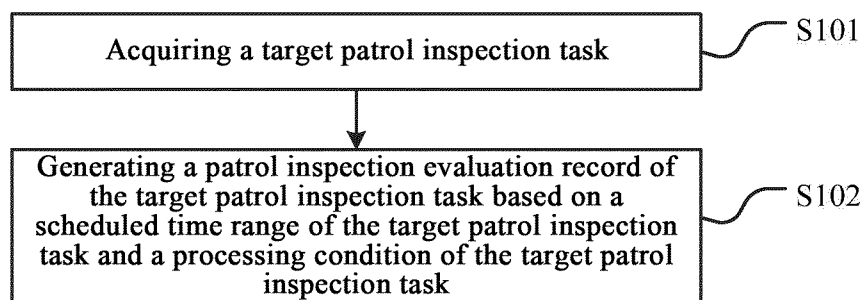


Fig.1

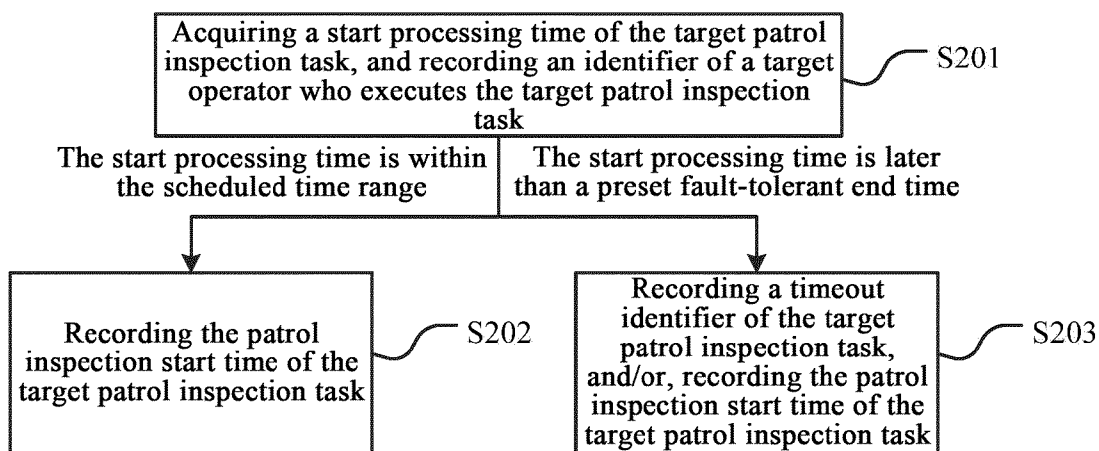


Fig.2

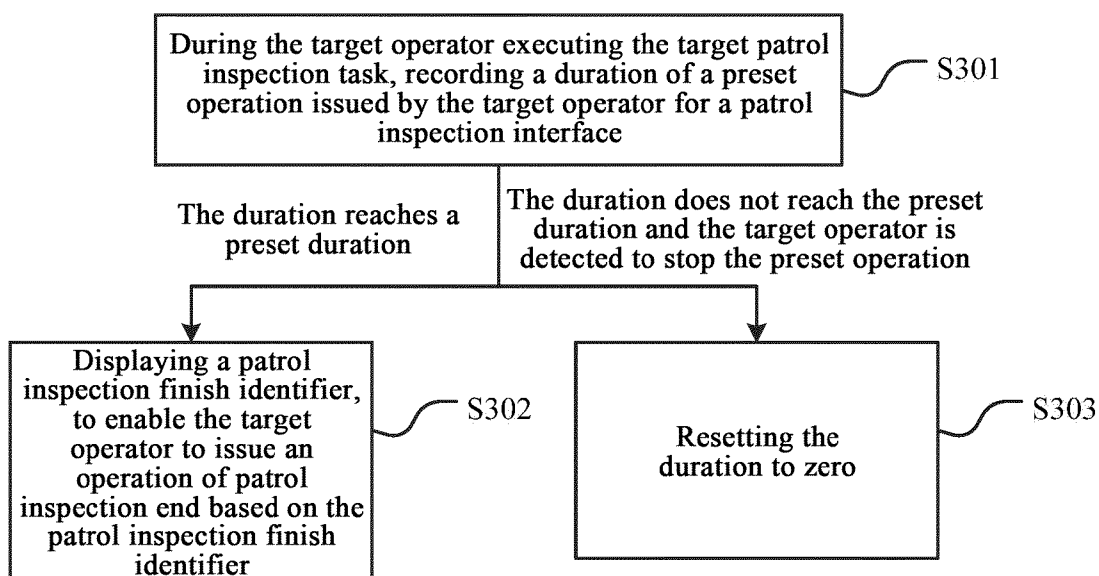


Fig.3

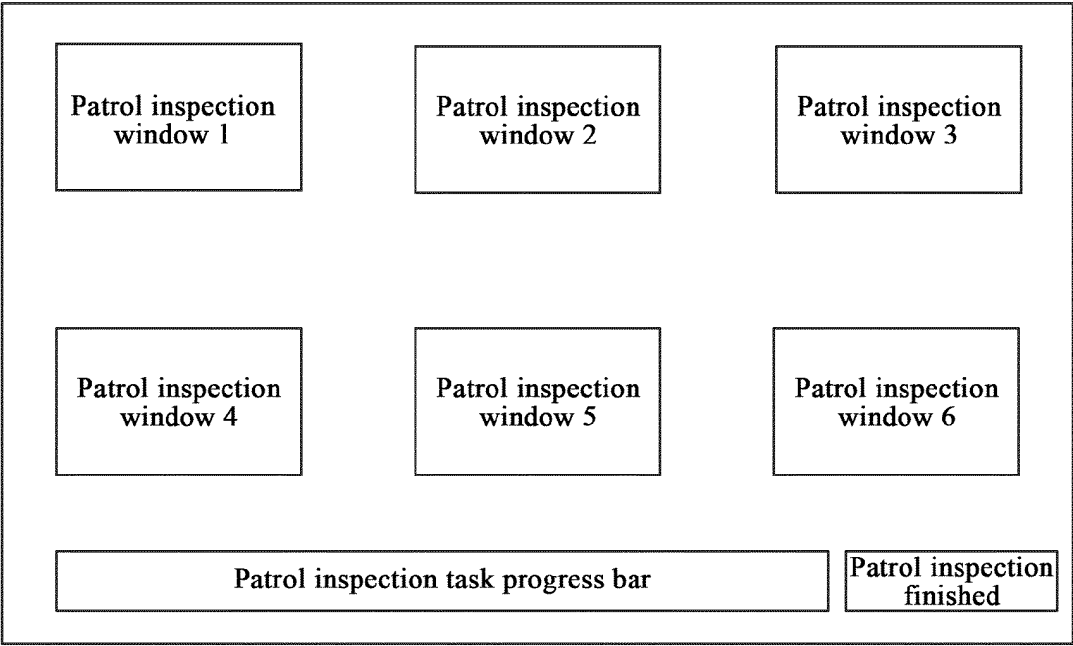


Fig.4

Classification of patrol inspection evaluation record	Patrol inspection task	Scheduled time range	Patrol inspection start time	Patrol inspection end time	Finish state	Target operator
XX	1	2021/5/26 20:00-20:15	2021/5/26 20:07	2021/5/26 20:09	Finished	A
XX	2	2021/5/26 21:00-21:15	Timed out 2021/5/26 21:17	2021/5/26 21:23	Finished	A
XX	3	2021/5/27 5:00-5:15	2021/5/27 5:05		Unfinished	B
Query	4	2021/5/27 6:00-6:15	Missed being processed			
XX	5	2021/5/27 20:00-20:15				
XX						
XX						

Fig.5

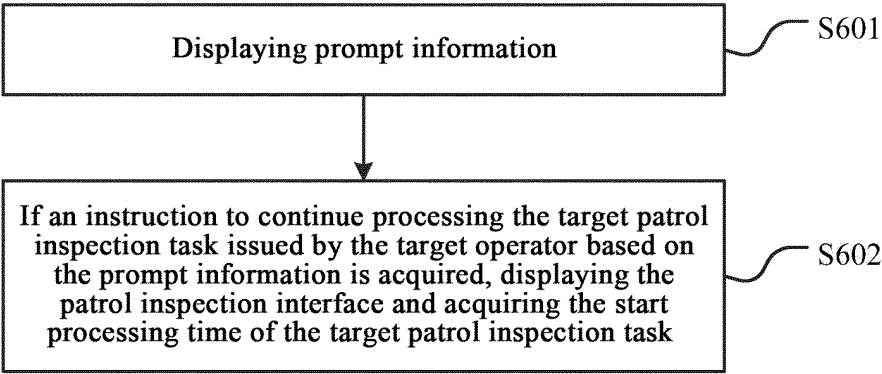


Fig.6

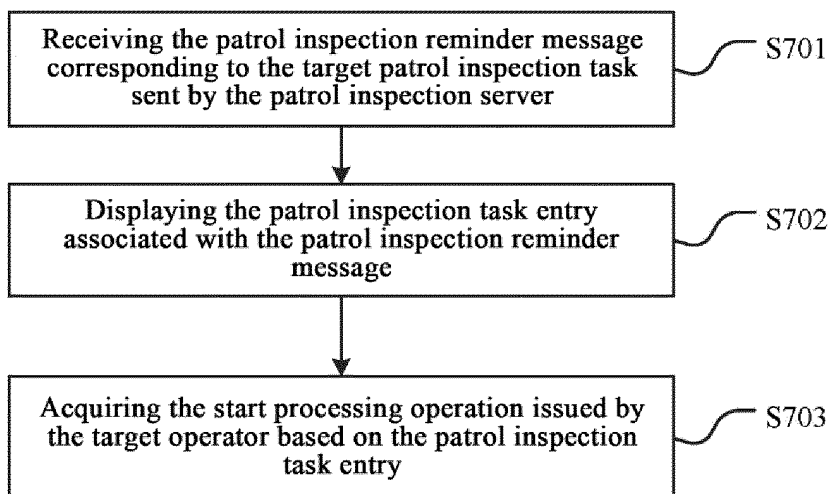


Fig.7

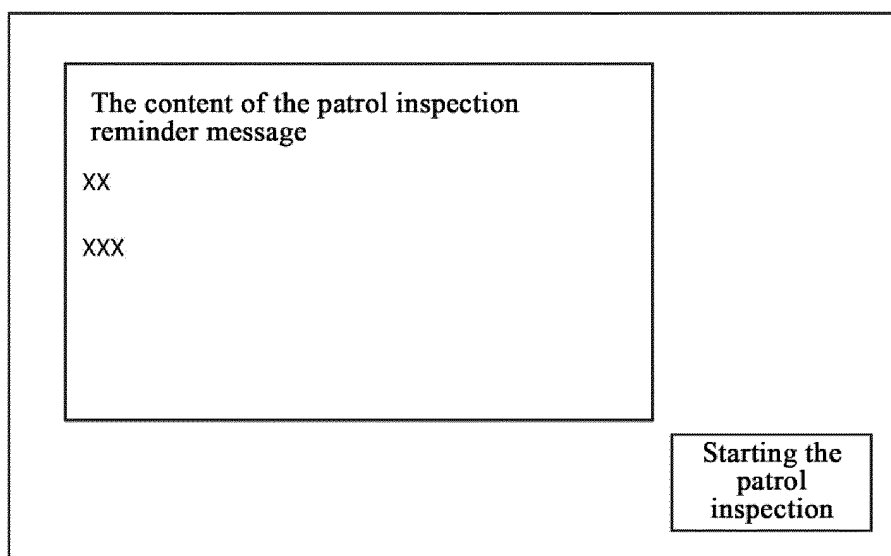


Fig.8

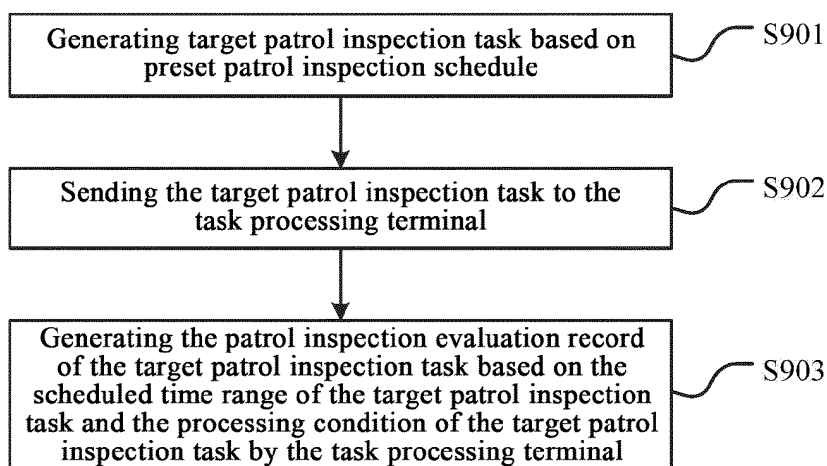


Fig.9

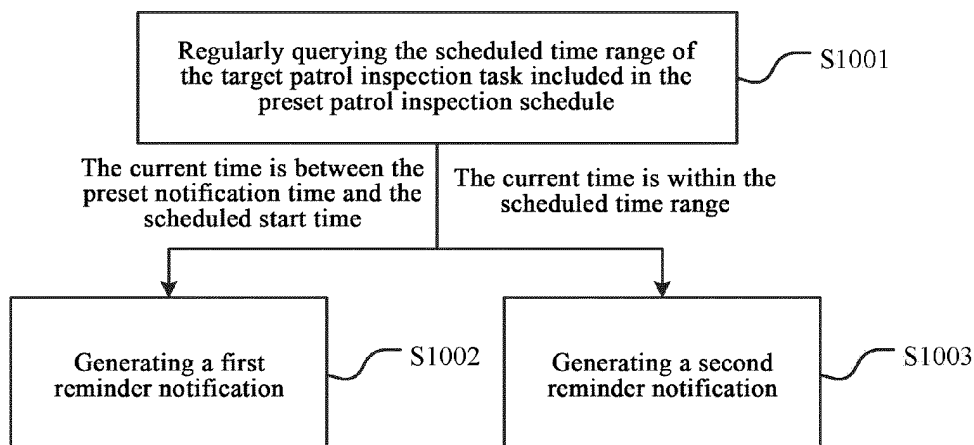


Fig.10

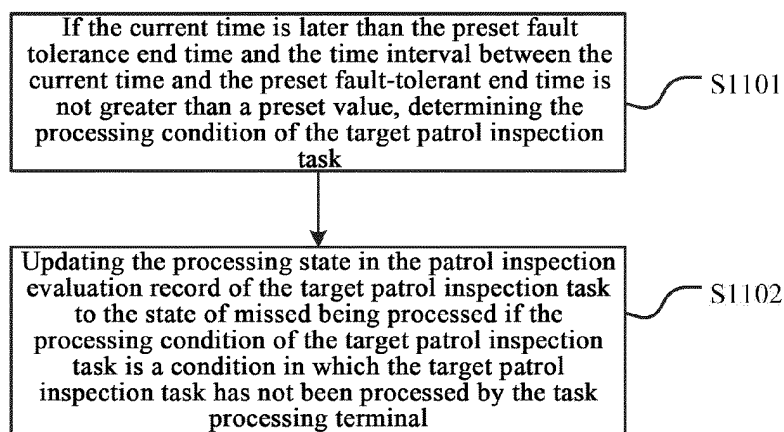


Fig.11

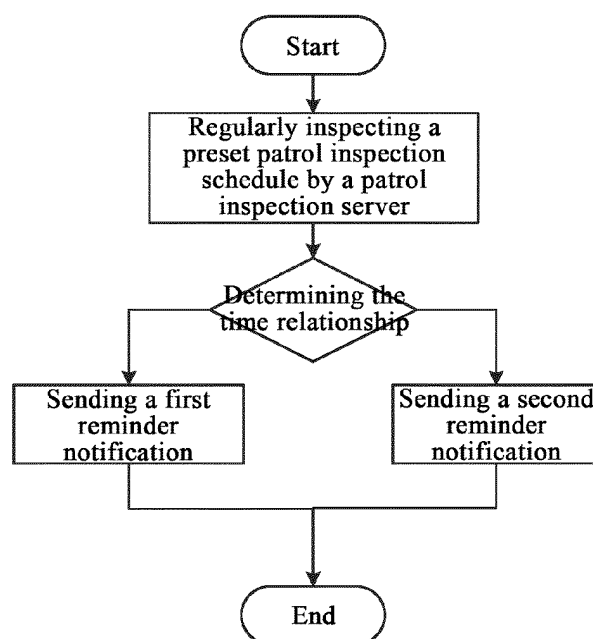


Fig.12

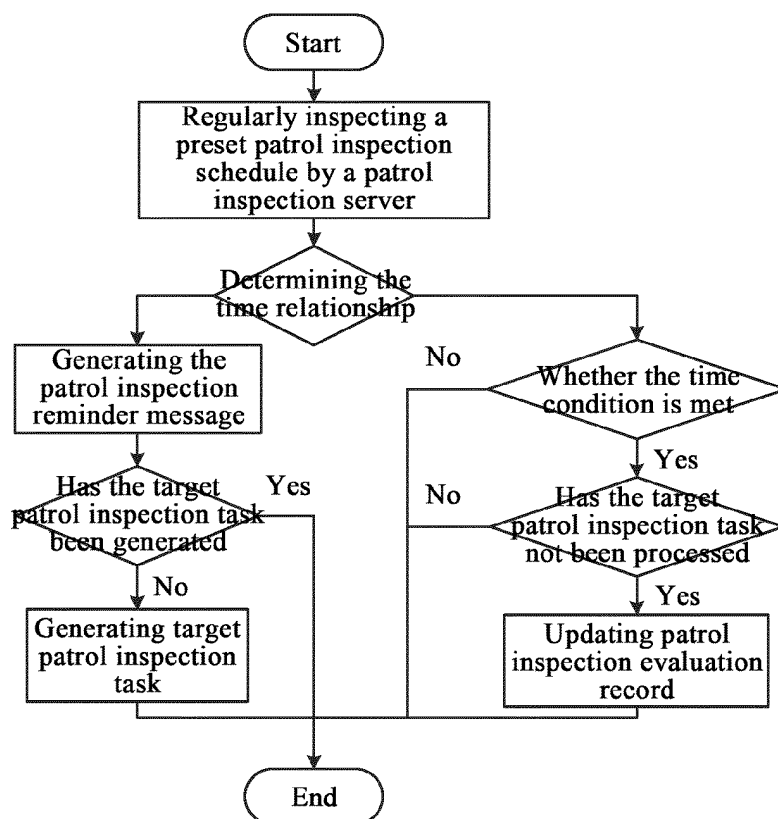


Fig.13

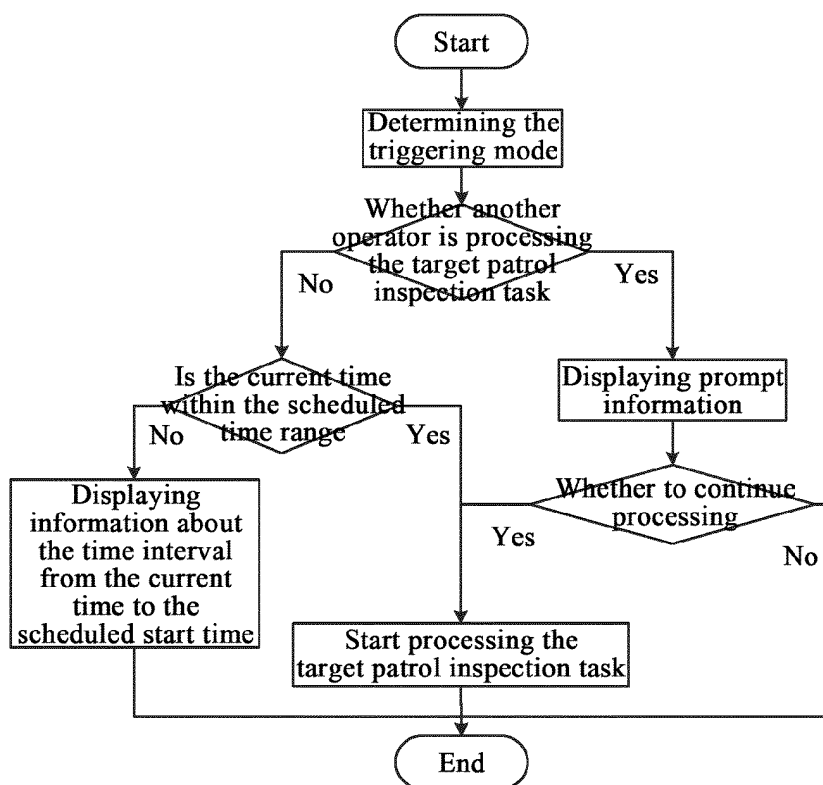


Fig.14

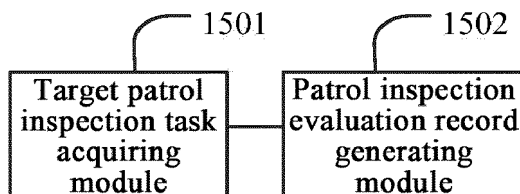


Fig.15

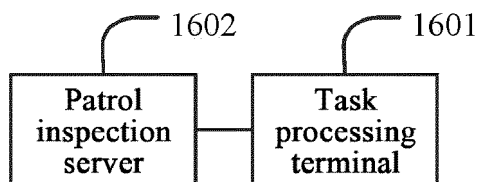


Fig.16

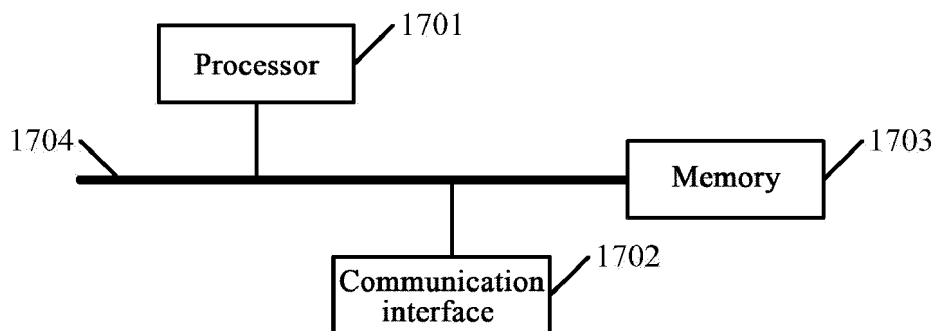


Fig.17

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2023/096327

A. CLASSIFICATION OF SUBJECT MATTER

G07C1/20(2006.01)i; G07C1/10(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: G07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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

CNABS, CNTXT, CNKI: 视频, 巡视, 巡查, 检查, 时间, 时长, 评价, 评估, 播放, 远程, 监控; VEN, USTXT, WOTXT, EPTXT, ISI: video, inspection, check, time, evaluation, play, remote, monitor

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 115147947 A (HANGZHOU HIKVISION DIGITAL TECHNOLOGY CO., LTD.) 04 October 2022 (2022-10-04) claims 1-12, description, paragraphs 117-354, and figures 1-17	1-13
Y	CN 109727330 A (SHENZHEN XINGHAI IOT TECHNOLOGY CO., LTD.) 07 May 2019 (2019-05-07) description, paragraphs 36-136, and figures 1-11	1-13
Y	CN 107749091 A (SHIJIAZHUANG UNIVERSITY) 02 March 2018 (2018-03-02) description, paragraphs 27-58	1-13
Y	CN 101848375 A (BEIJING YINTU DIGITAL TECHNOLOGY CO., LTD.) 29 September 2010 (2010-09-29) description, paragraphs 8-30, and figure 1	1-13
Y	CN 101923736 A (ZHEJIANG UNIVERSITY OF TECHNOLOGY) 22 December 2010 (2010-12-22) description, paragraphs [0016]-[0030]	1-13
A	CN 102456238 A (CHINA TELECOM CORP., LTD.) 16 May 2012 (2012-05-16) entire document	1-13

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

“A” document defining the general state of the art which is not considered to be of particular relevance

“D” document cited by the applicant in the international application

“E” earlier application or patent but published on or after the international filing date

“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

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

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

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

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

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

“&” document member of the same patent family

Date of the actual completion of the international search

28 August 2023

Date of mailing of the international search report

05 September 2023

Name and mailing address of the ISA/CN

China National Intellectual Property Administration (ISA/
CN)China No. 6, Xitucheng Road, Jimenqiao, Haidian District,
Beijing 100088

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2023/096327

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 103400426 A (BEIJING SINYD LIGHTING CO., LTD.) 20 November 2013 (2013-11-20) entire document	1-13
A	CN 109754288 A (SHENZHEN WATER WORLD CO., LTD.) 14 May 2019 (2019-05-14) entire document	1-13
A	CN 110533388 A (SHANGHAI GAO CHENG INTELLIGENT TECHNOLOGY CO., LTD.) 03 December 2019 (2019-12-03) entire document	1-13
A	JP 2022054521 A (MITSUBISHI ELECTRIC CORP.) 07 April 2022 (2022-04-07) entire document	1-13

Form PCT/ISA/210 (second sheet) (July 2022)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2023/096327

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 115147947 A	04 October 2022	None	
CN 109727330 A	07 May 2019	None	
CN 107749091 A	02 March 2018	None	
CN 101848375 A	29 September 2010	CN 101848375 B	27 July 2011
CN 101923736 A	22 December 2010	None	
CN 102456238 A	16 May 2012	None	
CN 103400426 A	20 November 2013	CN 103400426 B	17 June 2015
CN 109754288 A	14 May 2019	None	
CN 110533388 A	03 December 2019	None	
JP 2022054521 A	07 April 2022	None	

Form PCT/ISA/210 (patent family annex) (July 2022)

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- CN 202210757866 [0001]