Software User Manual

Version: Patrol2.0 and above version

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About This Manual

This document introduces the main functions, the user interface and operations of the system.

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Definitions

Super User: The user who owns all operation levels of the system, can assign new users (such as company management personnel, registrar, and patrol administrator) in the system and configure the roles of corresponding users.

Role: During daily use, the super user needs to assign new users owning different levels. To avoid setting individual levels for each user, roles having certain levels can be set in Role Management, and then be assigned to specified users.

Checkpoint Card: A non-contact location card set on a patrol location. The patroller can swipe the location card at the point to complete the patrol task.

Patrol Route: A series of checkpoints are arranged in a certain order to create a patrol route.

Patroller Card: A card that identifies each individual patroller during a patrol task.

Sleep Time: The device will enter sleeping mode without doing any operations in setting sleeping time. The range of sleep time is 10 to 600 seconds. While the device is placed in charging bases, and the foundation is connected with computer by USB, the device will always be in working mode and will not go to sleep.

Fingerprint Scanner Driver: The device is used to register user's fingerprint information.

1 System Instruction

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1.1 Installing Environment

- **Configuration Requirements:**

  CPU: 2.0 GHZ Main Frequency above of;

  Memory: 1G or above;

  Hardware: Available space of 10G or above. We recommend using NTFS hard disk partition as the software installation directory (NTFS hard disk partition has the better performance and higher security).

- **Operating System:**
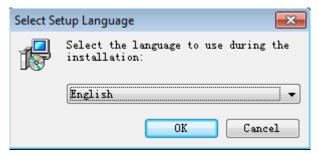
  Supported Operating Systems: Windows XP/Windows 2003/Windows Vista/Windows7/Windows8

  Supported Databases: Microsoft Access/MS SQL Server2005 and above version

1.2 Installing Software

Opening the folder "Patrol Management System" in the CD-ROM, double-click the "Set up.exe" file, the following interface appears:

Select [**English**] in the pull-down combo box. Click [**OK**] to pop up the following figure.

Click [**Next**], the following interface appears:

Click [**Next**], the following interface appears:

Select installation path of the software, click [**Next**] and enter the following interface:

Select path of the program's shortcuts, click [**Next**], the following interface displays:

Select database you need to install, click [**Next**], the following interface shows up:

Click **[Browse]** to select the backup path.

☺ **Note:** The database backup path and the present system installed path cannot be under the

same disk. Don't set the path to the root of a disk, and the path cannot contain blank.

Click [**Next**] to enter the following figure:

Click [**Install**] to enter the setup process of fingerprint reader driver. Following prompts of interface, click [**Next**] → [**Install**] →[**Finish**] to finish the setup of fingerprint reader driver. Until the following interface pops up:

Click [**Finish**], restart the computer, and click the shortcut "**Patrol2.0 Security System**" on the desktop to open the software.

1.3 Functions Instruction

The patrol system features human centered design and automatic scheduling. It is a management system designed for security, attendance, and logistics companies.

Components of the system: A management computer, a patrol device, checkpoints (location cards), charging bases, lithium-ion batteries, USB data cables, intelligent software, and protective tubes.
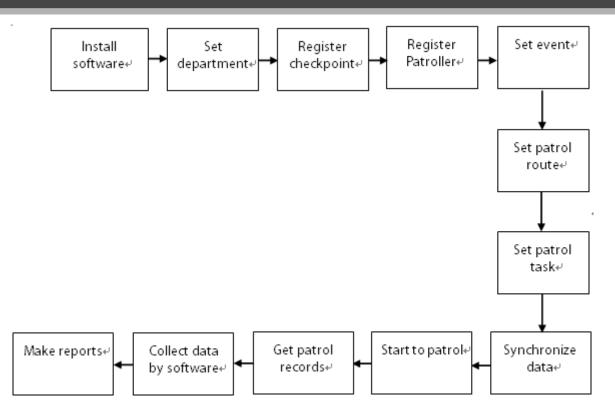
The system includes five major functional modules:

System: A structure used to assign users, configure user roles, manage databases (such as backup and recovery), modify password, system initialization, navigation, system language, logout and exit.

Department: Department Management setting is used to set company's organizational structure.

Patrol: A **C/S** Frame-based management system that provides common patrol functions and manages patrol tasks on a computer. It is mainly used for warehouse management and patrol management.

Report: Data statistics is used to collect patrol data. Electronic map can list all patrol checkpoints, and you can view who patrol this checkpoint in a certain time by click it on the map.

Help: You can view "**Patrol2.0 Software User Manual**", and check software and SDK version.

1.4 Basic Operation Flow

The following are the basic steps to use the system, the user just needs to follow the steps below and skip the items which are not displayed on their interface.

🖎**Note:** Before registering patroller, please set the department, for detail, consult 4 Department

Management.

2 System Management

2.1 User Login

(1) Double click the [**Patrol 2.0 Security System**] shortcut on the desktop, the following the homepage pops up.

(2) Enter user name and password, and click [**OK**], to enter the system.

✍ **Note:** The user name of the super user is [**admin**], and the password is [**admin**]. After first login into the system, for system security, please use the [**System**] ➔ [**Modify password**] function to modify the password.

The super user can assign company personnel as system users (such as company management personnel and registrar) and configure the roles of corresponding modules. For details, consult 7.1 Role.

2.2 Exit System

Click [**System**] ➔ [**Exit**] directly or click [×] on the top right corner of the system interface to log out the system.

2.3 Modify Password

The super user and the new user created by the super user (the default password for the new user is "admin") can use the [**Modify password**] function to modify the login password for system security. Click [**System**] ➔ [**Modify password**], it pops up the Edit Page. Enter the old password and the new password, confirm the new password and click [**OK**] to complete the modification.

2.4 Select Language

1. Login into the system, click [**system**] ➔ [**System Language**], you can choose Chinese or English,
   and then restart the software to make it effective.
2. When you install the patrol software, choose the language what you need, it popup Chinese,
   English etc. Choose the language which you need, and then click [**next**] to install the software.

2.4 Select Language

3 Navigation

When you enter the system, or choose [**system**] → [**Navigation**], it will show the [**Navigation**] main interface, displaying common operations and other important information. Click one navigation icon to enter its operation interface.

4 Department Management

Before managing company personnel, it is required to describe and manage the company departmental organization structure. Upon first use of the system, by default it has a primary department named [**Head office**] and numbered [**1**]. This department can be modified but cannot be deleted.

4.1 Add Department

1. Click [**Department**] from the system menu. The department management window is displayed as below.

2. Click **Tree Show** to pop up following interface.

3. Click [**Add**], the department adding window is displayed.

The fields are as follows:

Department Name: Any character, up to a combination of 30 characters;

Department Number: If required, it shall not be identical to another department. The length shall not exceed 50 digits.

Parent Department: Select from the pull-down menu and click [**OK**];

After adding, click [**OK**] to complete, or click [**Cancel**] to cancel it.

To add a department, you can also use [**Import**] to import department information from other software or another document into this system. For details, consult Appendix 1 Common Operation. [**Parent Department**] is an important parameter to determine the Company's organizational structure. On the right of the interface, the Company's organizational structure will be shown in the form of a department tree.

4.2 Department Maintenance

Edit: Upon a change to the department or organizational structure, user can use the [**Edit**] function to modify the department. Double click "Department Name, Department Number or Parent Department" directly, or select the department first (that is, tick☐before **Department Number**), then click [Edit] above department list to enter the edit interface for modification.

Delete: To delete a department, tick☐before **Department Number** to select the department, and click [Delete] above the department list to delete it.

✎ **Note:** A department cannot be deleted freely. If so, the personnel under the department will

be pending, and some historical data will not be able to be queried. If deletion is required, please first transfer the departmental personnel to another department.

Export: Click [Export] above the department list to export department information for checking

or processing.

Check Log Entries: Click above the department list to check operation logs of department.

5 Patrol Management

The patrol management control and monitor the tasks of patrollers, for example, checking the patrol time, route, and location and checking whether the patrol is carried out according to the task. Main operations include the checkpoint management, personnel management, event management, route management, task management and online operation.

Patrol procedure:

Step 1 Connect the patrol device to the computer and synchronize data including patrol staff and fingerprints, patrol routes, events, time and device parameters to the patrol device.

Step 2 Identify the patroller before the patrol starts. After identify successfully, select a patrol route and the screen will display the patroller's information.

Step 3 Reach the first checkpoint following the patrol route at the specified time, punch the checkpoint card, verify the patroller identity and select event. The patrol device notifies the next checkpoint.

Step 4 Complete all checkpoints patrolling as above **Step3**. At the last checkpoint, verify patroller identity to end the patrol. Connect the patrol device to the computer after the patrol and get patrol records.

✍ **Note:**

(1)   Starting and ending a patrol route needs to identify the patroller, four verification modes are supported: only fingerprint, only card, card or fingerprint, card plus fingerprint. You can set the verification mode by clicking **[Online Operation]** →**[Synchronize data to device]**. Click
   on this interface to set whether to identify the patroller at checkpoints. Tick it to identify the patroller at checkpoints, and the verification mode is the same as that of starting / ending the patrol route; you need not identify the patroller without tick it.

(2)   If you do not patrol the start checkpoint of the route, the device will always prompt the start checkpoint during patrolling process, unless you check it and patrol other checkpoints following the right route.

5.1 Checkpoint Management

Set a checkpoint in a location that needs to be patrolled. Patrollers can punch cards when they

reach the location and complete the patrol.

You can add, edit, delete checkpoint, and export checkpoint and check system operation logs.

● **Add Checkpoint**

1. Click [**Patrol**] →[**Checkpoint Management**] or click [**Checkpoint Management**] in the navigation tree on the left. The Checkpoint Management window is displayed.

		Checkpoint Number	Name	Card Number
1	☐	1	First Floor	11653325
2	☐	2	Second Floor	14120058
▶ 3	☐	3	Third Floor	14150059

2. Click [**Add**], the following interface appears:

Name: The checkpoint name in a patrol location

Card Number: Manual input card number in the following box, it is used for patrol verification.

3. Enter information in the displayed window as required and click [**OK**]. The new checkpoint is displayed in the checkpoint list. To exit without saving the event, click [**Cancel**].

● **Manage Checkpoint**

Edit: Double click" number, name or card number" of the checkpoint to be edited; or select the checkpoint first (that is, tick☐before **Number**), then click [Edit] to enter the edit interface for modification.

Delete: To delete a checkpoint, tick☐before **Number** to select the checkpoint, and click [Delete] to delete it.

Export: Click [Export] to export checkpoints information for checking or processing.

Check Log Entries: Click [Log Entries] to check operation logs of checkpoints.

5.2 Personnel Management

This function allows you to add patrollers to patrol system.

On this interface, you can check the patroller's No., name, card No., and fingerprint information. You can add, delete, and export patroller information, and check system operation logs.

● **Add Patrol Staff**

1. Click [**Patrol**] → [**Personnel Management**] or click [**Personnel Management**] in the navigation tree on the left. The patrol staff window is displayed as below.

2. Click [**Add**], the following interface appears:

The fields are as follows:

Personnel Number: Manually input, and cannot repeat. By default, the length can not exceed 9-digit; the first digital cannot be 0. When personnel number does not meet the rules, system will prompt error message.

Department: Select from the pull-down menu, and double click the selected department or click [**OK**] to select department. If the department was not set previously, you can only select the default [**Head office**] department.

✍**Note:** For department settings, you can refer to 4.1 Add Department.

Card Number: Assign a card number to the person for patroller identity use. Range from 0 to 4294967295.

Personal Photo: The best size is 120*140 pixels.

Employment Date: By default it is the current date.

Register Fingerprint: Register the fingerprint of patroller for patrol verification. Every patroller can

register 10 fingerprints at most (It is recommend to register 2 ~5 fingerprints). The way to register fingerprint by fingerprint scanner, for detail, please consult Appendix 1 Common Operation.

Terminal management privilege: Click the drop-down check box to select terminal management privilege for the new added personnel. Terminal management privilege includes General user, Administrator and Super administrator.

✐ **Note:**

(1) Administrators and super administrators can enter into device menu for operating, while general users cannot enter.

(2) Super administrator can do any operations on patrol device without privilege limit. Administrator can enroll administrators and general users, and also can enroll super administrators when no super administrator is enrolled. Administrator can delete general user and himself, but cannot delete other administrators and super administrators. Without super administrators and administrators, general users can carry out any operations on patrol device.

Input other information of the patroller, such as name, mobile phone, job title, email, birthday, gender, and employment type.

3. After input all the information, click **[OK]** to finish this new adding and return to personnel list; click **[Cancel]** to cancel and return previous interface, click **[Save and continue]** to save this adding and continue adding other patroller.

● **Manage Patroller**

Edit: Double click "personnel number/first name/last name/FP quantity or card number" of the patroller to be edited; or select the patroller first (that is, tick⬜ before **Personnel Number**), then click [Edit] to enter the edit interface for modification.

Delete: To delete a patroller, tick⬜ before **Personnel Number** to select the patroller, and click [Delete] to delete it.

Export: Click [Export] to export patrollers information for checking or processing.

Check Log Entries: Click [Log Entries] to check operation logs of patrollers.

5.3 Event Management

This function allows you to add the events that may take place on patrol or that need to be included in an event list, and then synchronize them to the patrol devices for subsequent query. Events linked to a route will be synchronized together with the route. You can add, edit, delete event, and export

event and check system operation logs.

● **Add Patrol Event**

1. Click [**Patrol**] → [**Event Management**] or click [**Event Management**] in the navigation tree on the left. The Event Management window is displayed.

✎ **Note:** By default, the system exist an event named **Normal**, numbered **1**; you can edit, but

cannot delete it.

2. Click [**Add**], the following interface appears:

The fields are as follows:

Name: Input event name.

Card number: A card that represents a specific event. Card Number ranges from 0 to 4294967295.

Remarks: Specific describe the event.

☺ **Note:** Number of event is auto assigned by the system in sequence, which need not input.

3. Enter information in the displayed window as required and click [**OK**]. The new event is displayed in the event list. To exit without saving the event, click [**Cancel**].

● **Manage Patrol Event**

Edit: Double click" number/name/card number or remarks" of the patrol event to be edited; or

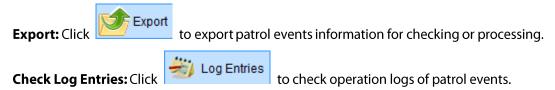select the patrol event first (that is, tick▢before **Number**), then click [Edit] to enter the edit

interface for modification.

Delete: To delete a patrol event, tick ☐ before **Number** to select the event, and click

to delete it.

✍ **Note:** If an event cannot be deleted, it is active in some routes. To delete this event, go to the

route management window, deselect the event, return to the event management window, and

perform deletion.

Export: Click to export patrol events information for checking or processing.

Check Log Entries: Click to check operation logs of patrol events.

5.4 Route Management

This function allows you to select checkpoints and arrange them in a certain order to create a patrol

route. You can add, edit, delete patrol route, and export patrol route and check system operation

logs.

● **Add Patrol Route**

1. Click [**Patrol**] ➔ [**Route Management**] or click [**Route Management**] in the navigation tree on

the left. The route Management window is displayed.

2. Click [**Add**], the following interface appears:

The [**Checkpoint list**] contains all the checkpoints except those displayed in the [**Checkpoint sequence**] of route. You can move checkpoints between the two windows by using buttons in the middle.

Operation instructions as below:

(1) Button ⟩⟩ is used to move all checkpoints in the **Checkpoint list** to **Checkpoint sequence** of route. Button ⟨⟨ is used to move all checkpoints in the **Checkpoint sequence** of route to **Checkpoint list**.

(2) Button ⟩ is used to move the ticked checkpoint(s) in the **Checkpoint list** to **Checkpoint sequence** of route. Button ⟨ is used to cancel the ticked checkpoint(s) from **Checkpoint sequence** of route, that is, move ticked checkpoint(s) in the **Checkpoint sequence** of route to **Checkpoint list**.

(3) Buttons ∧ and ∨ are to move a checkpoint up and down in the **Checkpoint sequence** of a route.

(4) Button ⩾ is used to insert the ticked checkpoint(s) in the **Checkpoint list** to the location above the selected checkpoint (that is, the checkpoint cursor is on) in the **Checkpoint sequence** of route.

(5) Button 🗐 is used to group checkpoint(s) in the **Checkpoint sequence** of route (namely divide a patrol route into several sub-routes). After grouping, different groups displayed in **Checkpoint sequence** column will be separated by semicolon(checkpoints in a same group will be separated by comma still), shown as following figure:

Grouping can complete a relay patrol by multiple patrollers. For example, there are A, B, C, D four doors in a park, and a patrol route surrounds them is required. If grouping checkpoints A, B, C, D; that is, dividing A→B, B→C, C→D,D→A into four groups. In this case, patroller of A door needs to patrol the route from A to B, then hand the patrol device over to patroller of B door; and patroller of B door needs to patrol the route from B to C, and so on. At last, patroller of D door patrols the route from D to A; which indicates all the patrol process is completed. Patrol records of this route will be summarized for statistics analysis by groups. Though several staffs patrol the route, the **Substitution Patrol** records will not appear in report of this route (While it is necessary to insure only one patroller patrols in a group. If more than one patrollers patrol in a same group, there will exist **Substitution Patrol** records for the group).

☺ **Note:** The latter group is subjected to the previous group. If patrollers of previous groups do not complete the patrol on time or absent from their patrol, it will lead that the patrollers of latter groups cannot finish their route qualified.

(6) The right smaller window contains all the events, which can be selected for the current route by ticking the checkboxes before them. You can select maximum 32 events for a route.

Time interval can be set for checkpoints verification, which can be set as **Unlimit Interval**, **Averaging Interval** or **Custom Interval**.

● **Select** "**Unlimit Interval**"

Do not set time interval for checkpoints verification (that is, time interval for two checkpoints verification can be set as any value), if you tick "**Unlimit Interval**". The interface shows as below:

Time limit: It specifies the time in which a patrol must be completed. If it is set to 0, no time limit is set for a patrol. For example, if it is set to 10, a patrol must be completed within ten minutes; otherwise, the patrol is deemed to be abnormal.

Error: The default is 0, 0 means no error in a patrol is allowed. If it is set to 1, the error before and after completing a patrol is one minute respectively. For example patrolling a route starts at 01:00, time limit is 10 minutes and error is 1minute; then the total patrol time ranges from 00:59 to 01:11.

● **Select** "**Averaging Interval**"

Averaging Interval means that the time interval for verifying each two checkpoints is the same, interface displays as following figure:
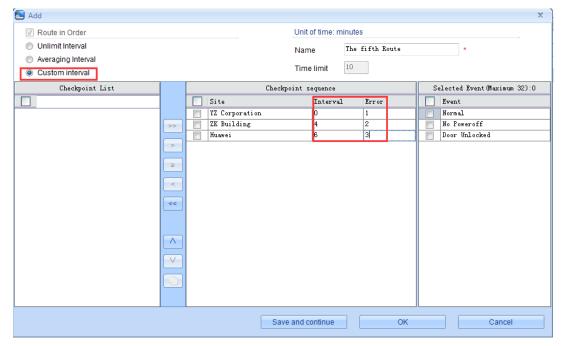
Interval: A patrol with interval limit is the patrol orderly. The interval of each checkpoints is the time interval of patrol verification from previous checkpoint to current checkpoint. You cannot verify the current checkpoint earlier or later than the time interval.

Input **Interval** and **Error** of checkpoints at the bottom of the **Checkpoint Sequence** list, system will display **Time Limit** of the patrol route automatically.

Take above figure as an example, average interval is five minutes and error is one minute. If patrolling the route starts at 01:00, the patroller must verify first checkpoint at 01:00 or at error time range (00:59~01:01). And the patroller must verify second checkpoint at 01:05 or at error time range (01:04 ~01:06), the patroller must verify third checkpoint at 01:10 or at error time range (01:09 ~01:11).

- **Select" Custom Interval"**

This function can set different time interval for verifying each two checkpoints separately, the setting interface displays as below:

Input **Interval** and **Error** behind each checkpoint in the **Checkpoint Sequence** list, system will display **Time Limit** of the patrol route automatically.

Take above figure as an example, interval of second and third checkpoint is four minutes and six minutes, error for the three checkpoints is one minute, two minute and three minute separately. If patrolling the route starts at 01:00, the patroller must verify first checkpoint at 01:00 or at error time range (00:59~01:01). And the patroller must verify second checkpoint at 01:04 or at error time range (01:02 ~01:06), the patroller must verify third checkpoint at 01:10 or at error time range (01:07 ~01:13).

☺ **Note:**

(1) Once the patrol start time and interval is determined, the verification time of each checkpoint is fixed. The checkpoint must be verified at the interval time, earlier and later than the interval is not allowed.

(2) If set error time in a patrol route, the verification time of each checkpoint must be in the error time range.

3. In the displayed window, enter name of a patrol route, select checkpoints for the route, select events, and click [**OK**]. The new route is displayed in the route list. Click **[Cancel]** to quit the adding.
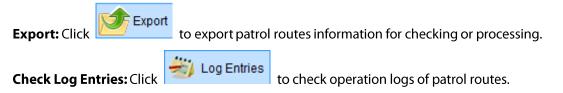

●   **Manage Patrol Route**

Edit: Double click" number/name/checkpoint sequence/time limit/error (before)/error (after) or style" of the patrol route to be edited; or select the patrol route first (that is, tick___before **Number**), then click [image] to enter the edit interface for modification.

Delete: To delete a patrol route, tick___before **Number** to select the route, and click [image] to delete it.

Export: Click [image] to export patrol routes information for checking or processing.

Check Log Entries: Click [image] to check operation logs of patrol routes.

5.5 Task Management

This function allows you to arrange patrol date and time for specified patrol route. You can add, edit, delete task, and export tasks and check system operation logs.

●   **Add Patrol Task**

1. Click [**Patrol**] →[**Task Management**] or click [**Task Management**] in the navigation tree on the left. The task management window is displayed as below.

On the main interface, the left window displays the patrol routes and the right window contains specific tasks about each route.

2. Click [**Add**], the add interface appears:

Operation instructions:

(1) Tick patrol date check box as your required from Sunday to Saturday on the right window. Once a patrol task is set, it will be valid always, unless it is be edited or deleted.

(2) Select start and end time for a patrol route. When the end time earlier than the start time, the "**Morrow (Over at midnight)**" check box will be ticked. This patrol will be defined as a patrol across the day.

(3) Tick [Batch Add ☑] checkbox, a patrol task will be split into several subtasks (namely patrol shifts) by patrol duration and interval based on the selected patrol time range.

✎ **Note:** To schedule patrol tasks for periods of 01:00 to 02:00, 02:30 to 03:30, and 04:00 to 05:00, you do not need to treat them as three patrol tasks but one task that spans 4 hours. That is, the start and end time is set as 01:00 and 05:00. Specifically, choose "**Batch add**" when creating a scheduled patrol task, and set **Time** as 60 minutes, **Interval time** as 30 minutes (the rest time between two patrols).

Patrol time: patrol duration for specified route, it must be longer than time limit.

Interval time: specifies the resting time between two patrols.

✎ **Note:** When **Time limit** for a patrol route is **0**, and there is time left after batch scheduling, if time left is longer than (or equal to) half of the **Patrol time**, then add a patrol task, otherwise, not add; when **Time limit** is not **0**, and time left is shorter than **Patrol time**, but longer than (or equal to) **Time limit**, then add a patrol task. The end time of a patrol task is subject to the end time of completing a patrol route, otherwise not add a patrol task.

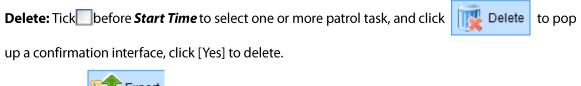3. After all the information is specified, click [**OK**]. And the new patrol tasks are displayed in the
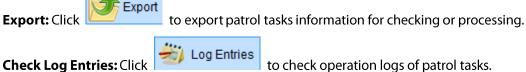
patrol task list.

● **Manage Patrol Task**

Edit: Double click the patrol task to be edited; or select the patrol task first (that is, tick☐before **Start Time**), then click [🖉 Edit] to enter the edit interface for modification.

You can modify patrol date for this patrol task(from Sunday to saturday).

Delete: Tick☐before **Start Time** to select one or more patrol task, and click [🗑 Delete] to pop up a confirmation interface, click [Yes] to delete.

Export: Click [Export] to export patrol tasks information for checking or processing.

Check Log Entries: Click [Log Entries] to check operation logs of patrol tasks.

5.6 Online Operation

Patrol device must be connected to computer before the operation. The **Online Operation** includes synchronizing data to device, getting patrol records, deleting device data, viewing device data, upgrading firmware, and checking system operation logs.

Steps are as follows:

1. Click [**Patrol**] ➔ [**Online Operation**] or click [**Online Operation**] in the navigation tree on the left. The online operation window is displayed as following figure.

The main interface of this function displays all the used devices.

2. Click [**Synchronize data to device**], the following interface appears:

Operation instructions:

(1) Device parameters

Verification mode: A method to identify the patroller for starting or ending the patrol route. Four verification modes are available: Card plus fingerprint, Card or fingerprint, Only fingerprint, Only card.

It needs to identify the patroller at a checkpoint when tick ☑ Patroller Verification at Checkpoint , identify method is selected in the "**verification mode**" drop-down check box. Otherwise, it need not identify the patroller at a checkpoint.

Sleep Time: The device will enter sleeping mode without doing any operations in a certain time range. By default, it is 20 seconds.

Date format: Set the date format for patrol device, there are ten formats for selection.

(2) Selected Route (maximum 20):0

Select the patrol routes which need to be synchronized to device, at most 20 patrol routes can be selected.

(3) Please select the data you need to Synchronize

Device Parameter: It indicates whether to synchronize the device parameters, including the verification mode, date format and sleep time.

Route and event: It indicates whether to synchronize all routes and events of these routes.

Device Time: It indicates whether to synchronize the device time to the current computer time.

Personnel and fingerprint: It indicates whether to synchronize the patroller and the fingerprint information.

(4) Click [**Synchronization**]. The current synchronization progress is displayed. Otherwise, click [**Return**] to quit.

✍**Note:**

If you want to synchronize data for a new device, please select all the data for synchronization.

3. Click [**Get patrol records of the device**], the following interface appears:

Tick the methods to get data records, including getting new records and getting all records. And select whether to get personnel and fingerprint information. Click [**Get**] to display the current synchronization progress, click [**Return**] to quit.

4. Click [**Delete device data**], the following interface appears:

6. Click [**Upgrade Firmware**], the following interface shows up:

Click [**Delete**] to delete the selected type of data.

5. Click [**View device data**], the following interface appears:

Click [**View**] to view the selected type of data.

6. Click [**Upgrade Firmware**], the following interface shows up:

Click [**Browse**] and select the firmware that you want to upgrade, and click **[Upgrade]** to upgrade.

7. Click [**Log Entries**], System operation logs are displayed.

6 Report

6.1 Data Statistics

You can query the patrol original records, exceptions, and statistics by date and route. You can also analyze and collect statistics on the overall patrol process.

Click [**Report**]➔ [**Data Statistics**] or click [**Data Statistics**] in the navigation tree on the left. The data statistics interface is displayed as below.

Statistical analysis: Collect statistics on all routes and events. You can reset specific start time, end time, patrol route, event name and personnel number as required. Click the ⬚ button on the right of the patroller No. to open the patroller selection window. Select the patrollers for statistical analysis and click **[OK]**.

The query results and statistical analysis results are displayed at the bottom of the window. There are three tabs in the area:

Original records: This tab page contains the patrol route, checkpoint sequence, actual patrol number, actual patrol name, personnel number, first name, last name, time, and event. You can query the detailed patrol records of a patroller on this tab page.

Report: This tab page contains the patrol route, task date, start time, end time, required patrol sequence, actual patrol sequence, actual patrol start time, actual patrol end time, remarks and last name.

Summary: This tab page contains the personnel No., first name, last name, required patrol, actual patrol, qualified, verification failed, timeout, extra patrols, substitution patrol, incorrect patrol, non-implemented patrol, absence, and percent pass. You can query the details of patrols.

Fields in Statistics Analysis reports state as below:

Verification failed: The patroller does not authenticate or using the wrong verification method.

Timeout: The time of patroller verifying the checkpoint is within time scope set for the patrol route, while it dissatisfies the interval and error settings. Timeout exists only when setting interval value for the patrol route.

For example, a patrol route setting as below:

If patrolling the route starts at 03:00, time scope for completing the patrol route is 02:59~03:11. The patroller must verify first checkpoint at time range (02:59~03:01). And the patroller must verify second checkpoint at time range (03:04 ~03:06), the patroller must verify third checkpoint at time range (03:09 ~03:11). If the actual time for verifying those three checkpoints is 3:02, 3:03 and 3:08 separately, these three time points are **Timeout**. Although these three verification time points meet the total time range for the patrol route (02:59~03:11), they dissatisfy the interval and error setting. Those three checkpoints will display **Timeout** in **Statistics Analysis** report.

Extra Patrols: The checkpoint(s) of a route is (are) patrolled more than twice discontinuously in a patrol task, the result of the checkpoint(s) will be displayed as" **Extra Patrols**". Namely, though you verify checkpoint A more than once continuously, the result of checkpoint A will just display the last verification (the continuous verification will be treated as once verification). But if you verify other checkpoint(s) after verifying checkpoint A, at this time a total patrol route is not completed. And then you back to checkpoint A for verifying again. Then the patrolling result of checkpoint A will be displayed as" **Extra Patrols**". Such as a patrol route is 1,2,3; the actual patrol sequence is 2,1,3,2,3. the patrolling result of checkpoint 2 and 3 will be displayed as" **Extra Patrols**". For that you verify checkpoints 1 and 3 after verifying checkpoint 2, at this time a total patrol route is not completed. But you back to checkpoint 2 for verifying again (that is, the patrol sequence of 2, 1, 3, 2 in the actual patrolling). Thus, the patrolling result of checkpoint 2 will be displayed as" **Extra Patrols**". In the same way, you verify checkpoints 2 after verifying checkpoint 3, at this time a total patrol route is not completed. But you back to checkpoint 3 for verifying again (that is, the patrol sequence of 3, 2, 3 in the actual patrolling). Thus, the patrolling result of checkpoint 3 will be displayed as" **Extra Patrols**" too.

✍ **Note:** If some checkpoint(s) is (are) patrolled more than twice discontinuously in a patrolling process, while the total patrol records contain a right route, this patrol records are qualified. But checkpoint(s) patrolled repeatedly in the patrol records need(s) to be displayed in "**Extra Patrols**" column of report.

Substitution Patrol: More than one patrol staffs enroll in a patrol route, the latter patrollers will be deemed to replace the first patroller for patrolling. The result of this patrolling will display as "**Substitution Patrol**".

✍ **Note:**

(1) One patrol device supports patrolling of multiple routes, and one route can be patrolled by several patrollers once.

(2) When adding a new patrol route, if grouping checkpoints of the route(namely divide a patrol route into several sub-routes), and only one patroller patrols in a same group; there will not exist "**Substitution Patrol**" records for the route, although several patrollers patrol the route (patrol records of the route will be summarized by groups). But if more than one patroller patrol in a same group, there will exist "**Substitution Patrol**" records for this group. For the detail of **Grouping**, see 5.4 Route Management.

Incorrect patrol: The patroller patrolling not follow the right route.

Non-implemented patrol: The patroller misses one or more checkpoints in the patrol.

Reset Query conditions:

The default query conditions (start and end time, route name, event name and personnel number) are as following:

Original record:

Original record lists all patrol records. You can get original records with different conditions, set query condition as required and click [**Original record**], the original records is displayed at the bottom of the interface:

Summary：

Summarizing the statistics analysis result in specified query condition.

Set query condition as required and click [**Statistical Analysis**] to get summary records:

The analysis result may be affected by system parameter settings. You can click the ⬚ button next to the [**Personnel Number**] text box to display a patroller list.

✎ **Note:** When you need to obtain the records of **Summary**, please select [**All event**] from the [**Event**] drop-down list. If you select specific event from the [**Event**] drop-down list, the system will hide [**Report**] and [**Summary**] tab pages automatically.

Report:

Set query condition as required and click [**Statistical Analysis**] to get [**Report**] information, you can check patrol task date and time, required/actual patrol sequence, patrol start and end time on this tab page.

☞ **Note:** Click ⊞ before patrolled routes to check detail patrolling information of the routes.

Export: Click [Export] to export statistics analysis result for checking or processing.

Print: Click [Print] to print the result displayed in current window. The print content is the searching result displayed in current window, including header, title, searching date and time. For example, the following figure is one report print interface.

6.2 Electronic Map

Electronic map can list all checkpoints, and you can view who patrol this checkpoint in a certain time by click it on the map.

You can add, edit, delete electronic map; and add, delete site; and add, delete connection; save positions and check system operation logs.

Click [**Report**] → [**Electronic map**] or click [**Electronic map**] in the navigation tree on the left. The electronic map window is displayed as following figure.

● **Add Map**

Click [**Add Map**] to enter map adding interface as below:

Input Map Name, click [**Browse**] to select path for saving the map, then click [**Open**] to select and open the map.

After setting,click [**Ok**] to complete adding and return electronic map management interface.

● **Edit Map**

Click [Edit Map] to enter the map edit interface, the edit operations are the same as that of adding. You can modify map name and reselect a map. After modification, click [**OK**] to finish.

● **Delete Map**

Switch to the map need to be deleted, click [**Delete Map**] to pop up a confirmation box; click [**Yes**] to finish deleting.

- **Add Site**

Click **[Add Site]** to pop up a dialog box for adding sites, which shows as below:

Tick sites need to be added to the map, click **[OK]**, the selected sites will appear on the map.

Dragging the new added sites to appropriate location of the map.

- **Delete Site**

Click **[Delete Site]** to enter the following interface:
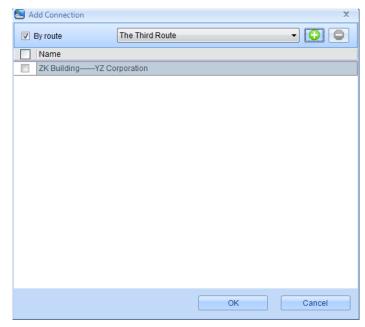
Tick sites to be deleted, click **[OK]** to delete them from the map.

● **Add Connection**

☺ **Note**：At least two sites on the map, you can do operation of connecting them.

Click **[Add Connection]** to pop up the connection interface.

1. Tick" **By route** " on the adding connection interface, which shows as below:

You can connect sites according to the patrol route existed in system. Select a patrol route from the drop- down box behind "**By route**" (the patrol routes are the routes added in 5.4 Route

Management). Click to add sites patrolling sequence of the route. Tick one or more

connection of the patrol route, and click **[OK]** to finish connection adding.

2. Do not tick "**By route**" on the adding connection interface, which shows as below:

Select sites for the new connection from the two drop-down boxes behind "**By route**" separately, click [icon] to add the patrol sequence for the two sites. Tick one or more connection and click **[OK]** to finish the connection adding.
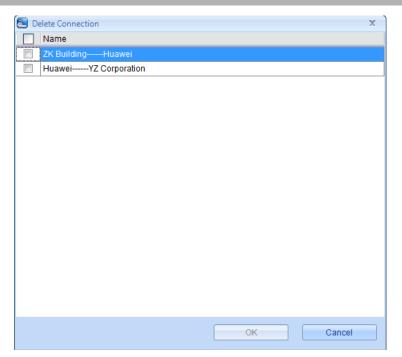
☺ **Note:** If need to cancel a connection from the selected connections list, you can tick the connection first and click [icon] to cancel the connection.

● **Delete Connection**

Click **[Delete Connection]** to enter the interface for deleting connection as below:

Tick connection(s) to be deleted and click **[OK]** to delete it(them) from the map.

● **Save Positions**

Click **[Save Positions]** to save the new adding sites and connections on the map.

● **Log Entries**

Click **[Log Entries]** to check system operation logs.

7 System Setting

System settings primarily include assigning system users (such as company management personnel, registrar, patrol administrator) and configuring the roles of corresponding modules, managing database, such as backup, restore, and setting system parameters, such as setting system language and system initialization, etc.

7.1 Role

During daily use, the super user needs to assign new users having different levels. To avoid individual setting for each user, roles having certain levels can be set in role management, and then be assigned to specified users, including the levels set for four major functional modules of system setting, department, patrol and report. The system's default super user has all levels, and can create new users and set corresponding levels as required. The system's default super user cannot be edit and delete.

● **Add Role**

   (1) Click **[System]** → **[Role]** → **[Add]** to enter role setting interface;

   (2) Set role name, select your desired role setting item, and tick levels to be configured for users of different levels;

   (3) After setting, click [**OK**] to save and return to list, and added role settings will be shown in the list.

● **Manage Role**

Edit: Double click" Role and Remarks" of the role to be edited; or select the role first (that is, tick□ before **Role**), then click [Edit] to enter the edit interface for modification.

Delete: To delete a role, tick□ before **Role** to select the role, and click [Delete] to pop up a confirmation box, click **[Yes]** to delete the role.

7.2 User

Add new users to the system, and assign user roles (levels).

● **Add User**

1. Click **[System]** → **[User]** → [**Add**] to enter new user setting interface;

Input new user information, where items with **[*]** are mandatory. The parameters are as follows:

Name: Not more than 50 characters, only using letters, numbers or characters;

Password: The length must be more than 4 digits and less than 18 digits.

Confirm Password: Enter the password to confirm again.

Role: Non-super user needs to select a role. By selecting a preset role configuration, this user will have all levels configured for the role.

Remarks: The description of the role or other comments.

Status: The **[Normal]** and **[Device Disable]** states are available, indicating whether the user can log in to the patrol software system. If the **[Device Disable]** state is selected, the user cannot log in to the system, and a "**Device Disabled**" message is displayed.

2. After inputting, click [**OK**] to complete user adding, and the added user will be shown in the list.

● **Manage User**

Edit: Double click"Account, Role, Last login time and Remarks" of the user to be edited; or select the user first (that is, tick▢before *Account*), then click [📝 Edit] to enter the edit interface for modification.

Delete: To delete a user, tick▢before *Account* to select the user, and click [🗑 Delete] to pop up a confirmation box, click **[Yes]** to delete the user.

7.3 Modify Password

Modify the system login password.

Click **[System]** → **[Modify Password]** to enter password modifying interface as below.

Input old password, new password and confirm new password, click **[OK]** to finish login password modification.

7.4 System Initialization

System Initialization is to restore data to system initialization status. The selected data in the database will be deleted, it takes effect after restarting the software.

Click [**System**] → [**System Initialization**], enter into edit interface, select one or several data-sheets to initialize, and click [**OK**] to complete initialization and return.

Choose the contents to initialize, click [**OK**] to clear the information in the database. Please operate the function with caution, it cannot recover if cleared the data.

7.5 Database Management

The system provides the database connection, backup, and restore. It allows you to set a path for database backup, and you can also clear patrol records in this function.

7.5.1 Database Connection

This Function mainly used for database change. Software database is **Access** by default. If need change to **Microsoft SQL Server** database, firstly, you should establish an empty database on the database server. You can find a script file with the name of **sqlserver.sql** in the directory of installing CD. Select the empty database established just now in the searcher of SQL Server, and then open the **sqlserver.sql** script files, to run and create a database that is to be used in this software.
Click [**System**] ➔ [**Database Management**] ➔ [**Database Connection**] to enter the following interface;

Select corresponding database and click [**Next**], then fill in database relevant information; click [**OK**] to pop up a box prompting whether to restart device, select [**Yes**]. The database will be changed after restart the device.

7.5.2 Backup Database

Periodically backup the system's database to ensure data security. To use the backed up data again, just restore the data.

Click [**System**] ➔ [**Database Management**] ➔ [**Backup Database**] to pop up a box prompting whether to begin backup database, click [**Yes**] to begin the backup process.

✎ **Note:** We recommended backing up the database after you create the personnel information, device information or part of patrol level settings.

7.5.3 Restore Database

Click [**System**] ➔ [**Database Management**] ➔ [**Restore Databases**] to pop up the following figure:

Select a successfully backed up database from the backup database list, click [**Open**] to begin restore the database. After successful restore, it will pop-up a window prompting whether to restart the software, click [**Yes**], system will restart to make the restore take effect.

✍**Note:** Don't close any command window prompt during the database restore process.

7.5.4 Database Backup Path Set

Click [**System**] ➜ [**Database Management**] ➜ [**Database Backup Path Set**], the edit interface appears as below:

Click [**Browse**] to select the backup path, click [**Save**] to save the selection and quit.

✍**Note:**

(1) In software installation process, it will prompt to set the database backup path. If you haven't set the backup path, the operation of backup database cannot be executed (The server for other computer to access, need to set the backup path in the server firstly).

(2) Proposal that the database backup path and the present system installed path not be under the same disk. Do not set the path to the root of a disk or desktop.
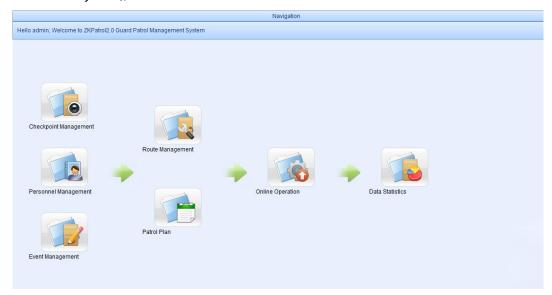
7.5.5 Clear Patrol Records

Click [**System**] ➜ [**Database Management**] ➜ [**Clear Patrol Records**] to enter the edit interface as following figure;

Select start and end time, click **[OK]** to clear patrol records in this time scope.

7.6 Navigation

Click [**System**] → [**Navigation**] to display the navigation interface as below (that is, the main interface of the system);

You can refer to 3 Navigation for detail instruction.

7.7 System Language
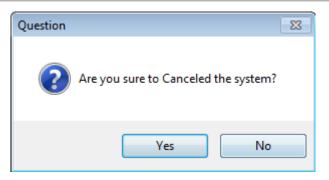
Click [**System**] → [**System Language**] to enter the system language selection interface;

Select system langugae form the drop-down list, and click [**OK**]. The new selected language will take effect after restart the software.
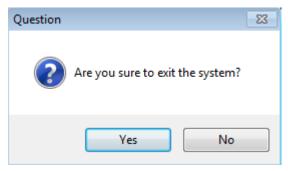
7.8 Logout and Exit System

1. Click [**System**] → [**Logout**] to pop up a confirmation box as following figure;

Click **[Yes]** to logout the system.

2. Click [**System**] ➔ [**Exit**] to pop up a confirmation box as following figure;

Click **[Yes]** to exit the system.

Appendixes

Appendix 1 Common Operation

1. Select date (taking adding patrol staff as an example)

Click [**Patrol**] ➔ [**Personnel Management**] ➔ [**Add**] to enter personnel adding interface, select date by clicking [icon] button behind Birthday or Employee Date. The date selection interface shows as below:

Click ◄ or ► button to select an earlier or a later month, and click on the desired date to select it. Click on year to activate the scroll button for year selection, and click ◄ or ► button to select an earlier or a later year. Also, you can directly to modify Year or Month in the editing box.

2. Import (taking importing a department table as an example)

Click [**Department**] ➔ [**Import**] to show the import editing interface:

Object file: Click [**Browse**] to select the file to be imported;

File format: Select the format of the file to be imported;

Separator: When the format of imported file is **Csv** or **Txt**, you need to insert a separator. Three separators (namely **. / -**) are supported by the system.

After setting, click **[Next]** to enter the following interface.

Select data column(s) to be imported from the "**Optional data columns**" list, click [>] to select it (them) into the "**Selected data columns**" list. Click [>>] to select all data columns from the "**Optional data columns**" list into the "**Selected data columns**" list. If you need to cancel the selected data column(s) from the "**Selected data columns**" list, select it (them) first and then click [<] to cancel it (them) from the "**Selected data columns**" list. Click [<<] to cancel all the data columns from the "**Selected data columns**" list.

After select the data column(s) to be imported, click **[Next]** to display the data to be imported as following figure:

Tick data to be imported and click **[Next]** to import the data columns, the importing process will display in the following windows.
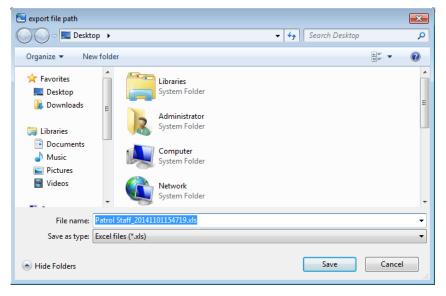
✍**Note:** When importing department table, if there is no department number or the department

number is repetition, the import operation cannot execute.

3. Export data (taking exporting patrol staff as an example):

Click [**Patrol**] ➔ [**Personnel Management**] ➔ [**Export**] to pop up the exporting interface as below:
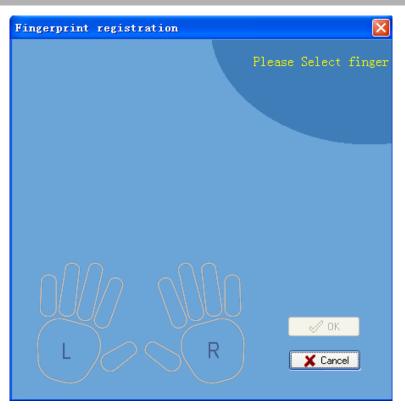
Select the save path, file name and save type for the exported file, click [**Save**] to save the exported

file.

✍**Note:** The exported table is the list currently shown.
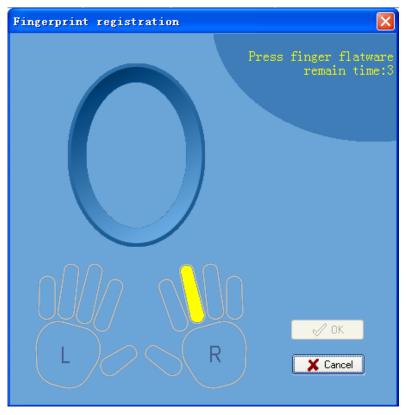
4. Registered fingerprint

(1) Connect the fingerprint scanner driver to the computer, click [**Patrol**] ➔ [**Personnel**

Management] ➔ [**Add**] to enter patrol staff adding interface. Click [**register**] behind "**Register**

Fingerprint" to pop up the following figure:

(2) Click a finger in the finger template, the following interface appears:

(3) Press the selected finger three times continuously on the fingerprint scanner driver. The interface

displays "Succeed in fingerprint registration". Click [**OK**] to complete the fingerprint registration.

Appendix 2 <END-USER LICENSE AGREEMENT>

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Appendix 3 FAQs

Q: What is the function of role setting?

A: Role setting can set unified level for the same type of newly added user, just directly select this role when adding users.

Q: How to operate if I want to set accounts for all personnel of the Company?

A: First, create a new role in system setting and configure the functions to be used for this role. Then

add a user, set user information, and select the user's role, thus adding a new account. For other accounts, operate same as above steps.

Q: How to adjust the department of a patrol staff?

A: Click [**Patrol**] → [**Personnel Management**], patrol personnel list is displayed. Tick personnel number and click [**Edit**] to enter personnel edit interface, and modify patrol staff department in the department item directly.

Q：Are the verification modes for starting/ending a patrol route the same as that for checkpoints verification?

A：Click [**Online Operation**] →[**Synchronize data to device**] to set verification mode for starting /ending a patrol route and checkpoints verification. Tick [✓ Patroller Verification at Checkpoint] to identify the patroller at the checkpoint, and the verification mode is the same as that of starting / ending the patrol route. Cancel ticking [☐ Patroller Verification at Checkpoint], patroller verification at the checkpoint is no need, but verification is still need for starting/ending a patrol route, the verification mode is selected in the "**Verification Mode**" drop-down list.

Q: How to group checkpoints when adding a new route?

A: First, move checkpoints in **Checkpoint List** to **Checkpoint sequence** of a route; then tick checkpoints need to be grouped in **Checkpoint sequence** list, click button [▣] to group this checkpoint. The checkpoint will be in dark grey status after being grouped.

The adding new route will be displayed in **Route Management** list, and different groups will be separated by semicolon (checkpoints in a same group will be separated by comma still). Above figure, the three checkpoints will be divided into three different groups after grouping the second checkpoint by clicking[▣]; the three groups are separated by semicolon. Shown as below:

Q: Why is no exception reported when a patrol is not executed as scheduled?

A: The system allows you to set error ranges and timeout periods. Within the allowable ranges, the patrols are considered normal. The default permissible error range is 0 minute, user can set the parameter according to the actual needs. The patrols executed in the timeout period are considered as timeout patrols.

Q: What is Capacity of the patrol device?

A: A maximum of 500 fingerprints, 1000 cards, and 30,000 records.

Q: What should you do if you lost the administer password.

A: Please consult our commercial representatives or pre-sales technical support engineers.