Research on Application of Elevator Emergency Disposal Platform

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Abstract: In order to ensure that the elevator emergency disposal platform is established and perfected, the problems existing in the supporting application software must be properly solved, so that the elevator emergency disposal can be carried out smoothly under the unified management of the system platform. Therefore, this paper analyzes the rescue application of the elevator emergency disposal platform in detail, through the modular design of the platform, initially establishes the rescue process with the elevator emergency disposal platform as the core, summarizes a set of new modes for comprehensive optimization of the traditional elevator emergency disposal work, clearly understands the development and implementation ways of the elevator emergency disposal application, and provides technical support for ensuring people's life safety.

1. Introduction

Under the background of the continuous improvement of China's modernization development level and the comprehensive deepening of the urbanization process, the number and height of buildings are increasing, and the use range of elevators is becoming wider and wider, which brings more convenience to people's life and work. Relevant units should strengthen active research on elevator emergency technology, scientifically design the overall framework of elevator emergency rescue platform, and ensure that the established emergency rescue process is highly scientific based on the elevator emergency disposal platform. On this basis, it is necessary to strengthen the key analysis of the practical application approach and mode construction scheme of the elevator emergency disposal platform, and discuss the development and function realization of the emergency rescue software in detail. While providing a new idea for the establishment and improvement of the elevator emergency disposal platform, it also provides software support for the platform to give full play to its functions.

2. Overall Structure of Elevator Emergency Disposal Platform

There are potential safety hazards in the operation of elevators, and the situation that people are trapped in elevator and elevator accidents occur frequently, causing certain damage to people's lives and property safety. The main elevator belongs to mechatronic equipment, and various fault problems can't be avoided during long-term operation. When the fault occurs, how to ensure that the elevator emergency rescue work can be carried out smoothly and quickly has become a highly concerned issue in today's society.

The elevator emergency disposal service platform is a comprehensive system with diversified functions, including not only the emergency rescue management system in the core position, but also the elevator supervision and management, elevator operation status monitoring and management, elevator maintenance management and other auxiliary systems. Through a comprehensive study of the functions and implementation of the elevator emergency rescue software, the overall framework of the elevator emergency response platform should be ensured scientific and reasonable.

The elevator emergency disposal management platform studied in this paper mainly makes full use of the map module, voice module and list module. It can contact the rescue personnel at the first time when receiving the rescue alarm, guide the rescue personnel to quickly arrive at the accident

site, and comprehensively manage and supervise the rescue process.

The voice traffic system in the rescue platform mainly provides a channel for the trapped people to contact the outside world. The trapped people can connect with the automatic call system of the rescue platform by dialing the phone. The system can send the rescue request of the trapped people to the relevant departments by SMS and automatically start the emergency rescue procedure of the elevator.

The elevator emergency rescue software can be downloaded and used with the help of computers, smart phones and other devices to ensure that the functions of elevator emergency rescue disposal, supervision and management data upload and so on can play a full role. When the elevator emergency rescue personnel and users carry out emergency rescue services, the intelligent dispatching shall be carried out in combination with the voice call center of the system and the elevator emergency disposal platform. It can not only accept the elevator rescue task at the first time, but also dynamically manage the rescue process, providing a lot of real data for the effective development of elevator rescue. Through the continuous optimization and improvement of the platform design function, the rescue process based on the elevator emergency disposal platform is initially established.

3. Application Mode and Realization Way of Elevator Emergency Disposal Platform Rescue

3.1 Development and Function of Elevator Emergency Rescue Software

In the process of developing and designing the elevator emergency rescue software server, a series of development tools such as Mysql database, Java language and IntelliJ IDEA 2020 can be fully utilized. With the help of Websocket real-time message synchronization technology, database real-time synchronization counting, database integration technology, Grable dependency management technology and Git version control technology, the elevator emergency rescue software can have a wide coverage.

During the development and design of elevator emergency rescue software client, a series of development tools such as development language, shared permissions, data storage, Android Studio, front-end framework including OKHTTP network, Eventbus event distribution and Smart Refresh Layout refresh can be fully utilized. With the help of Picture Selector technology, Gradle dependency management technology, Base Recycle View Adapter Herper adapter technology and intelligent devices supporting Android 5.0 or above, the elevator emergency rescue software can have strong use functions [1].

3.2 Use Process of Elevator Emergency Rescue Application Software

Through the effective application of elevator emergency rescue software, various modules in the rescue platform, such as "waiting for rescue", "rescue in progress", "overtime task", "historical rescue" and "I", can be brought into full play. On this basis, through the full integration with the voice call center and the elevator emergency disposal platform, the rapid dispatching goal in the intelligent elevator emergency rescue can be effectively realized, and the established elevator emergency rescue software operation process can be ensured to be relatively smooth [2].

3.3 Function Realization of Elevator Emergency Rescue Application

First, the realization of the "waiting for rescue" function. When the trapped person dials the rescue phone, the system will immediately generate a task in the "waiting for rescue" module, and the platform will automatically contact the emergency rescue personnel of the elevator user, send short messages to emergency rescue personnel, trapped personnel and elevator users according to the elevator emergency disposal process. At this time, the elevator attendant can quickly contact the rescue personnel by telephone through the emergency rescue software, timely notify the rescue personnel of the specific situation, and urge the rescue personnel to quickly arrive at the accident site. In the process of using the emergency rescue software, the rescue personnel can fully grasp the basic information such as the telephone number of the trapped person, the trapped time, the elevator

user, and the rescue address, so as to make full preparations for the effective implementation of the follow-up rescue activities [3].

Second, the realization of the "rescue in progress" function. When the rescue personnel click "confirm rescue", the task will automatically jump to the "rescue in progress" module. A series of basic information such as the basic information of the rescue elevator, the trapped time of the personnel, the estimated rescue time, the name and telephone number of the rescue personnel, and the telephone number of the trapped personnel will be displayed on the page. The personnel of the elevator contract maintenance unit, the personnel of the user unit, and the personnel of the network rescue unit can combine the relevant contents to formulate targeted rescue plans. During this process, rescue personnel can perform two operations, view navigation and complete rescue. By viewing the navigation, they can accurately determine the rescue location, select and use the traffic route, and quickly reach the rescue site. The operation, complete rescue, can provide rescue personnel with services such as data sorting and perfect functions after the completion of rescue work, provide huge samples for the analysis of various data, provide effective data for the supervision and management of special equipment, and provide real information for the effective follow-up maintenance of elevators. After the on-site rescue work is completed, the rescue personnel can click "complete rescue", fill in and submit relevant materials [4].

Third, the realization of "overtime task" function. If the task marked "waiting for rescue" in the system is affected by special circumstances, and the rescue personnel can't arrive at the scene and carry out rescue within 30 minutes, the task will automatically enter the "overtime rescue" module, and all elevator emergency rescue tasks can't be completed within 30 minutes, so the task can only be "completed" in the "overtime task" module. In the "completed task", relevant data must be filled in strictly according to the actual situation and forms must be submitted. In general, the "historical rescue" data generated in the "overtime task" module will not involve the operation track of rescue personnel. In the "completed task" module, the staff of the contracted maintenance unit is responsible for the settlement [5].

Fourth, the realization of the "historical rescue" function. The platform system can present all the historical rescue situations related to the rescued units in the form of a list. By viewing the historical rescue situation of the system platform, it is convenient for the elevator contract maintenance unit, user unit, special equipment safety supervision organization and other rescue organizations to view the rescue details and rescue tracks [6].

Fifth, the realization of "I" function. Making full use of the function of the "I" module can effectively manage the telephone, name and company information of the personnel who log in to the system platform, and provide many services such as online use instruction documents, version updates, code scanning downloads, password modification, logout, etc. for relevant personnel, which fully presents the convenience of the system and the friendliness of the interface [7].

4. Conclusion

On the basis of some achievements in the construction of elevator emergency rescue platform in China, this paper designs a new overall framework of elevator emergency rescue platform, systematically combs the elevator emergency process, and provides a strong basis for the development of elevator emergency rescue software. The new elevator emergency rescue disposal mode discusses the development and implementation of relevant software in detail, which makes the intelligent development of elevator emergency rescue platform possible, provides new ideas for the effective development of related work in the future, and enables people to enjoy safe and convenient elevator services.

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