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Design of Fire Control System Command Platform Based on Big Data

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Abstract: Today's era has entered the pace of development of the information age. Information has penetrated into all aspects of people's lives and is widely used in other fields. Advanced information technology can effectively improve the scientificity and accuracy of fire control dispatching and command system in decision-making, thus reducing people's property losses. With the arrival of the information age, all walks of life have entered a stage of rapid development. The fire control dispatching system has also undergone significant changes under the role of the information system, especially the big data plays a very important role in the process of building the information resource system. The construction and application of big data in the fire control system command platform also has a good effect. Big data can be used to make better guidance and arrangement for the fire control system, making the fire control work more efficient. This paper analyzes the application of big data in the fire control system command platform, points out the problems that should be paid attention to in the construction of big data, and puts forward the construction direction of fire control system command platform in the era of big data.
Keywords: Big data, fire protection system, command platform.

Introduction

With the gradual deepening and development of informatization, human society has long been inseparable from information and data, the two most active factors in current development, and the big data era is also gradually developed and utilized by people in such a social environment [1]. In recent years, with the continuous deepening of information construction of fire fighting forces, firefighting integrated service platform, fire statistics system, firefighting and rescue command and dispatch system, firefighting and rescue service management system and image integrated management platform have been put into use, and the data sources of firefighting system command platform are continuously expanding [2]. Major fires are easy to occur in crowded places, construction sites, inflammable and explosive units, residential buildings and other places, and the main responsibility for fire

safety of relevant units is not in place, hidden danger monitoring ability is insufficient, daily firefighting equipment management is poor, and fire safety awareness is weak and other issues are easy to cause fires [3]. For most of our country's fire control dispatching systems, there are still some deficiencies in the collection, summary and analysis of relevant information and data. In the actual application process, the adaptability of the system is relatively low, which affects the rapid development of fire rescue programs. Information technology has played an important role in various industries, and the fire control system has undergone significant changes. How to use intelligent information technology in the context of big data for efficient, scientific, and perfect fire command and dispatch work is worth pondering [4].

Mankind has entered the information age. Big data has become a popular technology for the construction and management of information resources. Information technology has brought rapid changes to people's lives. The wide application of information technology under the background of big data has promoted the development and application of fire command and dispatch system to a certain extent. With the development of informatization, the use of informatization by fire brigades has also become more in-depth. The collection and transmission of data in the fire control system command platform has also become more critical and practical [5]. Only by adapting to the situation, facing changes, and building up big data thinking, mastering big data, and applying big data, can we better fulfill our job responsibilities and meet the needs of the work in the new period [6]. Advanced information technology can also effectively improve the scientific and accurate decision-making of the fire control command system, thereby reducing the loss of people's property, and ultimately promoting the comprehensive development of China's fire protection cause, creating a safe social environment for the people of the country [7]. This paper analyzes the application of big data in the work of the fire control system command platform, points out the issues that should be paid attention to in the construction of big data, and proposes the direction of the construction of the fire control system command platform in the era of big data.

Application of big data in fire control system command platform

According to the current judgment method of big data, big data is to deduce a more reasonable data result after regularly collecting and sorting out the data and guide the next action and plan. In the era of big data, decisions will increasingly be based on data and analysis, not always on experience and intuition. The command platform of the fire control system must collect and sort out the overall fire control data and make comprehensive data statistics for the areas it divides into. For the type of fire, the location of the fire and the extent of the fire, the data shall be collected, analyzed and classified, and then the police and fire fighting shall be carried out according to the specific conditions shown in the data. As the relevant departments have not yet established a multi-angle and all-round data analysis subject, this leads to

imperfect functions such as exchange and analysis of fire control information and data, thus leading to the lack of valuable information and data in the command and dispatch system. From the key units familiar with the whole process from drill to fire fighting and rescue operations, the operational command platform can access a large amount of data. Making full use of these data can provide scientific auxiliary decision-making and greatly improve the operational efficiency of the troops.

The stratification of data resources and practical experience is an important reason why effective joint operations cannot be realized, which leads to the lack of actual combat drills and combat composition in each firefighting unit, and ultimately affects the ability of each firefighting unit to enhance disaster relief. No matter in fire disaster relief drills or in actual firefighting operations, the fire control system command platform can obtain a large amount of data. These data are important data obtained in actual combat and drills. Collecting and sorting out these data and making full use of them can greatly improve the mobility and combat capability of the fire fighting forces. The fire control command and dispatch department can apply the big data intelligent analysis and matching system to timely analyze and match the fire alarm situations occurring in various areas within its jurisdiction, and use the big data intelligent analysis and matching system to meet the specific requirements of fire control work, thus fundamentally improving the work efficiency of the fire control dispatch system [8]. At present, with the in-depth development of the information construction of the fire fighting forces, the video surveillance of the troops has come from scratch and the cameras have gone from standard definition to high definition, thus basically realizing the coverage of key parts of the barracks. Bringing the management of fire troops into the scope of data management can improve the efficiency of troops management. In the daily management of troops, remote monitoring and dispatching of troops can be realized through the image management platform, thus strengthening the management of troops.

Development direction of fire control system command platform in big data era

The command platform of the fire protection system plays a central role in the handling of an accident. It is just like the human brain and has the comprehensive functions of concentrating strength, commanding operations, analyzing information, etc. In the era of big data information, fire command and dispatch departments should attach great importance to the establishment of big data intelligent analysis and matching system, and make the system application meet the basic requirements of fire service. In the era of big data, the fire control system command platform will become more automatic in handling fires. By establishing the fire geographic information system platform, the fire geographic information will be automatically searched and the distribution of fire water sources will be queried [9]. The establishment of big data information platform can effectively integrate all kinds of information data, and scientifically integrate the data of hazardous

chemicals, key fire-fighting units, Internet of Things system, equipment materials and other data, so as to formulate scientific input information standards. In the era of big data, any data has certain relevance. The two insignificant data may have very hidden relevance and may have very great effect and effectiveness.

Strengthen data management security

In the process of building the big data intelligent analysis and matching system, it is first necessary to fuse with various types of plan design and power dispatching levels. When obtaining the disaster alarm, the automatic and manual input data information should be compared and analyzed to some extent. The position of the command platform of the fire control system in handling the command platform in the fire control fire. In the face of increasingly complex natural disasters, man-made disasters and other accidents, the function of the command platform of the fire control system must become more diversified and integrated, and the disposal capacity must be upgraded to a higher level to make the disposal more efficient and scientific [10]. The image visualization system should be improved, relying on advanced technology and adding functions such as data analysis, database information scheduling and disaster analysis to the original basis, so that remote images can have information value while being monitored in real time, and the rescue and command efficiency can be improved. In front of different accidents and disasters, we should make good use of the integrated fire control system command platform to process and collect all kinds of data, analyze and feedback them into a ring-shaped data network, in which data transmission and use make decisions more efficient. Time is life for the work of fire control dispatching system. Using advanced data analysis and processing technology under the background of big data has extremely important guiding significance to the combat capability of firefighting system.

Conclusion

Under the background of big data era, the establishment of fire control command and dispatch system is facing a new development opportunity. The development of electronic information technology provides strong support for system construction. The position of the command platform of the fire control system in handling the command platform in the fire control fires must become more diversified and integrated in the face of increasingly complex natural disasters, man-made disasters and other accidents. Under the premise of today's big data era, we must study as much as possible the powerful aspects of data information for fire control systems, and use these advantages to overcome the shortcomings of traditional fire control methods, so as to better and faster as the goal, handle other accidents such as fires and aftermath, and ensure the safety of people's lives and property. The establishment of big data information platform can effectively integrate all kinds of information data, and scientifically integrate the data of hazardous chemicals, key fire-fighting units, Internet of things system, equipment and

substances, so as to formulate scientific input information standards. In today's society, the speed of economic development is faster and faster, but all kinds of disasters and accidents emerge in endlessly. In the era of big data, it provides an effective solution for the fire control command and dispatching department to discover and dispose the police situation in time and guarantee the safety of people's life and property.

References

[1] Tian, H. 2016. Analysis of how to improve the effectiveness of fire command and dispatch under the background of big data. China Management Informationization, 19 (14): 41-43.
[2] Zhang, P., Li, Z., Lan, Y.X. 2017. Construction of fire emergency rescue command decision-making platform under the background of big data. Neijiang Science and Technology, (08): 40 + 51-52.
[3] Jin, G.H. 2016. Analysis on how to improve the effectiveness of fire command and dispatch under the background of big data. China Fire Protection, 465 (07): 43-45.
[4] Tian, Y., Wang, G.K., Kou, Z.G. 2018. Comprehensive application platform solution for fire big data. Science and Technology Information, 16 (19): 12-13 + 20.
[5] Luo, Q. 2017. Opportunities and challenges faced by fire protection in the era of big data. Science and Informatization, (036): 186-187.
[6] Zheng, P. 2017. Research on fire truck networking system based on big data technology. Science and Technology Innovation and Application, (033): 168-169.
[7] You, Z., Chen, D.J. 2017. Discussion on the application of informatization in the fire fighting and rescue command system. Low Carbon World, (026): 263-264.
[8] Li, Y.L. 2018. Analysis of the application of big data in fire protection work. Fire Protection, 4 (24): 58-60.
[9] Cui, J.H. 2015. Analysis of cloud storage data security under big data environment. Information Security and Technology, 6 (5): 31-33.
[10] Li, R. 2015. Analysis of readers' information behavior under the background of big data. Journal of Library Science, (2): 75-77.