Research on Sports Competition Information Management Based on Computer Database Technology

Lanfa Yao††, Jiheng Zou†
†Sports Department, Heihe College, Heilongjiang, China, 164300
*Corresponding author e-mail: 161821@s.hlju.edu.cn

Abstract. Sports competition has the characteristics of long cycle, high investment, and many risks. Among them, sports competition has a far-reaching influence. Therefore, it is very necessary to build the sports competition data security monitoring management system. At present, China's information management is still in the initial stage of development, and many aspects need to be improved, such as the function of the information system is simple, low integration. To this end, this paper first on the sports competition data security monitoring management computer information system design and application to elaborate, and then in-depth computer information system structure, function, application and other aspects of research and analysis, hoping to have a positive impact.

Keywords: Sports Competition, Safety Monitoring, Computer Information Systems

1. Introduction
At present, China's information management level is still at a low level, and the sports competition data security monitoring system needs to be improved. However, with the continuous breakthrough and innovation of science and technology, the detection technology has been significantly improved[1-2]. Sports contest in the process, need real time data acquisition project competition, completes the comprehensive data analysis, and timely feedback to the contest can effectively ensure engineering scientific, normative and rationality of the competition, but the vast majority of sports competition competition does not pay attention to the analysis of the data, in the absence of competition under the guidance of scientific data, it is difficult to ensure the quality of the competition. Therefore, the design of computer information system for security monitoring management is particularly critical[3-6].

At present, China is in a relatively backward situation in the development of security monitoring and management computer information system software. There are few such software in the market. Moreover, the function of such software is only to simply store and process the tested data, and it cannot be timely fed back to the competition site.

2. Design overview of security monitoring management computer information system

2.1. Concept of system design
Building with GIS technology as the core of computer information system safety monitoring
management, and join the application of computer technology, network communication technology, in the hierarchical management mode, the implementation of safety monitoring and management of the whole process of sports contest in the true sense realize the standardization of the safety information in the process of competition and the systematic management, so that can grasp the sports competition race all aspects of the data and safety information, to ensure the engineering quality of the competition.

**Figure 1.** Information management based on computer database technology.

The design concept of the computer information system is to better optimize the safety management system of engineering data, which not only improves the sharing degree of safety data in all aspects, but also greatly optimizes the safety management process of engineering data and reduces the cost of safety management while ensuring the ability of accident prevention and control. The design of this system effectively improves the problem that it is difficult to give feedback in the traditional safety information monitoring and management, and realizes the integrated detection of the whole process, such as collection, processing, statistical analysis and feedback.

### 2.2. Design of the overall structure of computer information system

#### 2.2.1. Design of computer information system functions

Computer information system is a comprehensive system, which is a security monitoring and management system for the whole process of sports competition. The design of the system mainly includes the following aspects: competition progress information management, comprehensive data security information management, risk monitoring information management, completion data management, pre-competition design data management and competition process data change management, etc. The system needs to collect and mine comprehensive data from the above aspects, and process and analyze the data through software, and then give timely feedback.

#### 2.2.2. Design of physical structure of computer information system

The physical structure of the computer information system is based on The B/S mode, which relies on VPN and Ethernet to transmit and obtain the required security data information through the access to the system. The computer information system under this physical structure can effectively control the operation cost and information management security risk.
2.2.3. Design of logic architecture of computer information system

The logical structure of the sports competition data security monitoring system is based on the whole process of the competition, involving the security management information of all levels of the competition, is the whole process of sports competition integrated management system. The system adopts hierarchical structure, the structure system itself has the advantage of the hierarchical structure not only maintains the independence of each other, and can support each other, such as security information collection, information input, storage, processing, analysis and then turned to deep excavation and display, the whole process of sports competition competition comprehensive display without each structure layer to support each other.

![Diagram](image)

**Figure 2.** Sports competition information data management.

Communication layer is the main structure of system collection and storage. The support layer analyzes and processes the collected data and makes use of it. At the same time, it can also integrate existing data to mine potential and valuable information. The application layer is to comprehensively utilize and display the data stored in the system as well as the in-depth analysis results.

3. The application of computer information system in sports competition

3.1. Document management

The management of computer information system documentation is mainly in the following aspects: fire data, engineering data, risk monitoring information and all aspects of data security information. The traditional document management has brought a lot of work to the competitors because of the great variety and quantity of the documents. Staff through the computer information system document data management function, can effectively collect, input, consult and modify engineering data and personnel data, greatly improving the efficiency of document collection and sorting.

3.2. Safety monitoring and management

The computer information system can effectively realize the monitoring and browsing of the competition site. The security supervisors only need to operate the computer to watch the video of the competition site through the computer information system, and the manually recorded video can also be imported into the system for backup. It is worth paying attention to that the safety monitoring management also has the function of picture monitoring for violation of regulations and discipline. Through real-time image monitoring on the competition site with hazard sources, data security risks can be effectively controlled.

Access information as one of the main monitoring contents safety monitoring management, can effectively prevent the illegal foreign workers to enter the contest, no not carrying card or no entry facial information is allowed to enter the contest, once found system will start alarm function, at the same time capture trespassing and record the relevant information. At the same time, the safety monitoring system also has the function of attendance statistics, which can not only test the number
and name of the competition personnel on the site, but also record the number of times of the competition. Compared to traditional safety monitoring management, computer information system can not only provide standardized and unified data management interface, as well as efficient identification information data, and automatic analysis processing, and the overall competition all aspects of safety evaluation, if found abnormal data, real-time tracking analysis, and feedback to the engineers, processing.

4. Design of computer information system for security monitoring and management

4.1. Objective of system design
On the basis of the existing communication network, high new detection technology and monitoring means are added to improve the current computer information system, which has the defects of simple function and low integration.

4.2 Strengthen data security control ability
Safety monitoring management system is the competition of the whole process of management in engineering, so you need to all aspects of engineering competitions data receipt, processing, statistical analysis, field survey data, such as race of progress information, all aspects of data security information, risk monitoring, etc., only in all aspects of multi-level data information, and feedback to the project competition, can effectively control the security risks in the process of competition and quality competition.

4.3. Multi-level user collaborative participation
Through the effective monitoring of security information, the development of unified standardization can enable multi-level users to participate in cooperation, so as to effectively avoid the problem of system storage information overload. With the participation of multiple users, it also greatly improves the efficiency of information and the degree of information sharing within the system.

4.4 Realization of information integration
Is important to the development of computer information system integration, engineering competition actual multiple aspects and the link, the security of information acquisition and monitoring includes basic geography, race monitoring, risk management and the information, so the computer information system integration management can effectively promote efficiency of management of security monitoring, and implement visual management in the true sense.

4.5. Realize the emergency linkage mechanism
The safety monitoring and management system can allocate the existing resources scientifically and reasonably. For example, in the process of rescue and relief, experts in relevant fields will be positioned according to the safety status of the on-site project and the danger situation, and then the experts will formulate the emergency joint rescue measures. The rational allocation of social emergency resources can be based on the geographical situation and the degree of danger to carry out rapid emergency repair.

4.6. Dynamic control of data security
Sports competition is a dynamic process, the progress of competition, competition quality and risk control are affected by many factors, therefore, data security dynamic control is an important function of computer information system. Data security is dynamic control on whole process engineering competition risk more dynamic risk management, risk as one of the most difficult to control factors in the process of competition, the need to race the whole process of basic information and professional information store collected and summed up, and then to evaluate the risks and according to the contest
state, in view of the potential risks, develop early warning Settings and processing, implementation of all forms of risk control.

User permissions as an integral part of the system operation process, as well as the allocation of administrative authority and the main content, user rights mainly include sports race of party, monitoring, early warning, the subway company, etc., due to the user side is more, so need by means of hierarchical management to carry on the reasonable configuration of user permissions, the process is based on the change of competition schedule, user permissions will also change, so the user permissions Settings also belong to the important content in the dynamic control.

5. Conclusion
Sports competition data safety monitoring management of computer information system design and development is necessary, through the system, the effective implementation of the safety accident early warning information document, the monitoring of the implementation of the contest, unified management, etc., but there is still a function simplification, integration of computer information system, low degree of defects as a result, security monitoring computer information management system to track, sports competitions being widely applied to the above several aspects should be improved.

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