# Research on Key Technologies of Redundancy Software for Task Management Computer System

# Han Zhu

Wuhan Technology and Business University, Wuhan, China

Keywords: Task Management Computer System, Redundancy Software, Key Technologies

**Abstract:** Since Entering the New Era, Our Country Has Focused on the Research and Development of Science and Technology, and Invested a Lot of Energy and Funds in the Research of Task Management Computer System. Computer Redundancy Software is One of the Key Technologies. However, This Technology is Also in the Stage of Innovation and Development. It is Necessary to Understand and Analyze Its Current Development Status. Therefore, This Paper Analyzes the Application and Status of Redundancy Technology, and Expounds the System, Seeking Its Development Trend and the Realization of Technology Improvement, Providing a Certain Guarantee for the Further Development of Redundancy Technology, and Promoting the Continuous Research and Development of Its Key Technologies, to Provide Better Help for Our Computer System.

# 1. Introduction

Redundancy management technology is a more reliable basic technology which is often used in computer network. The most important content in redundancy management technology is fault-tolerant control. Fault diagnosis is a more basic technology existing in computer system at present, which is of great significance to the development of computer. In the task management computer system, it is necessary to analyze and diagnose the errors in the operation system of the computer, so it is necessary to use all kinds of technologies to protect the data and the computer network invisibly.

# 2. Current Situation

In the process of rapid development, task management computer system redundancy software provides a powerful help for computer network to promote the renewal and progress of computer. In the task management computer system, it is necessary to strengthen the improvement of its working mode, fault treatment and other aspects, and to reduce its limited factors and degrees, so it is necessary to explore the development path to improve its development space and provide a powerful platform for the renewal and development of the computer. Redundancy technology is often used in fault-tolerant technology to control and analyze errors, which has been applied in many fields and industries. In the current experiment, it is difficult to control or the cost of control is relatively high. In large projects, this technology is often used to control the process [1]. Building fault-tolerant technology with redundancy as the core can improve its development speed and ability in this respect, and through the use of redundancy technology, it can also improve its level comprehensively and reduce the economic investment in fault-tolerant control. For example, in the field of aerospace, because of the high experimental cost, fault-tolerant technology is often used to work, and redundancy fault-tolerant technology simplifies the fault detection process. For the sensor problem, the sensor problem can be solved very well, and the sensor error can be reduced by detecting the reaction with redundancy technology. One step is to improve the accuracy of the data in the aerospace and the timeliness of the problem discovery and to facilitate the diagnosis and resolution of the problems. The technology often adopted in the redundancy technology is fault isolation and reconstruction technology. By further strengthening the application of the redundancy technology, the two aspects of the technology can be developed and researched, and the basic

71

guarantee function is provided for the further development of the redundancy technology. In the aspect of the aircraft, the fault diagnosis of the system is mainly carried out by using the redundancy technology, so that the computer can be conveniently used for correcting the aircraft and accurately finding the position of the fault. and can be used for solving the problem that the fault can achieve good removal effect and help Flight companies bring more economic benefits.

### 3. General

### **3.1 Double Redundancy Technique**

In the redundant task management drilling rig system, the double redundancy task management computer system is often used. The computer system uses the dual-channel mode to carry on the compatibility, realizes the fault-tolerant error correction. Because the task manager system is generally the core control terminal of all aspects of the technology, the requirements for error control in this aspect are very high. The computer system of double redundancy task management can achieve a good fault-tolerant effect on errors, which can ensure the accuracy and transmission effect of line transmission, and has a good guarantee for the completion of the work.

#### **3.2 System Software**

In the use process of the dual-redundancy system, the requirement on the configuration is required to embody the main mode of the work, and the two channels can be divided into primary and secondary channels, and the fault-tolerant effect can be realized only if the structural design of the primary and secondary channels is in accordance with certain requirements, The two can help each other to overlap each other, and the fault-tolerant technology can be better reflected in[2]. First, task management software is needed to control and manage the system through the task management software, so that the work of all aspects can be unified and harmonious, and the economic loss caused by the conflict can be prevented. Second, a redundant tube is to be used Management platform and fault detection and error correction role. In addition, we also need to use BIM software to control the software production, through BIM software, we can produce the redundant software mentioned above as well as the task software, manage the information connection export and send and receive the information.

### 3.3 Mode of Action

the redundancy management software, the task management software and the BIM software can work together through the connection of the information data to achieve the overall effect, first, the redundancy management software receives the information transmitted by the BIM software through the interface, and analyzes the information by analyzing the information, And the result of the diagnosis of the redundancy management software and the voting result are transmitted to the task management software, so that the feedback type work can be carried out through the information transfer between the software, so as to ensure the normal operation of the system.

#### 4. Development

The basis of redundancy technology is to use statistical decision-making and management control theory to work, which can achieve good fault-tolerant effect on computer system. And on this basis, through the design of a variety of single programs, and through the use of a variety of complex design procedures to be compatible, so as to have a better fault-tolerant ability, can analyze and diagnose the problem, Therefore, in the future development, this technology can be simplified to make it more suitable for the updating of computers. It can achieve the compatible effect for any version of computers. At the same time, through intelligent technology and information transmission technology, it can make its treatment of problems more rapid and convenient, and realize efficient work mode [3]. And it can also give the corresponding diagnosis results, and then give reasonable solutions and suggestions. Through this scheme, users can be more

clear about how to operate the computer system, ensure the normal operation of the computer, and provide a certain basic guarantee for the construction of all aspects. Because computer system is the central structure of management, so the research on this aspect should be more in-depth. For the fault isolation and reconstruction technology of redundancy technology, we can also improve these two aspects to promote the further development of redundancy technology. The further development of redundancy technology can be realized through the hybrid application of redundancy technology, and the comprehensive management and application of the technology of non-linear system analysis redundancy technology and closed-loop system analysis redundancy technology. In its future development direction, the most important research focus is the use of redundancy technology in fault prediction technology. When the fault does not appear, you can know where the fault is and solve it in time to prevent economic loss. In addition, you can analyze the redundancy technology online in real time. Through the fault analysis to get the corresponding solutions, so it can be used in system reconstruction, to achieve a good problem-solving effect.

### 5. Key Points

The technology should be embedded in the redundancy management software, and the work should be more unified and synchronized through the coordination of each module, and the interlaced construction, synchronous work and switching between various working modes should be carried out among the modules. Therefore, it is necessary to control the control management system to realize the fault-tolerant effect, as well as the reliability means of central management, and promote the accuracy and correctness of computer decision-making.

## 5.1 Double Redundancy Synchronization Technology

The most important technology in redundancy technology is two-channel synchronous design technology. through the reasonable collocation of the two channels, the reliability of the whole redundant flight control computer can be guaranteed by the cooperation between the primary and secondary channels, and the decision-making and diagnosis of all aspects of the problem can be highly consistent, so as to realize the accurate guidance of the problem and ensure the rationality and efficiency of problem solving. The use of flight control computer can solve different problems at the same time, which also depends on the synchronization of two channels. It can effectively realize the diagnosis of problems and the search of similar problems, so as to promote the efficiency of work and make the design of two channels more reasonable. In the process of dual-channel synchronous design, to maintain the consistency of the channel work, the calculation capacity and the calculation speed can be improved, the same work scheme and the task are selected at the same time to work, and the completion of the task can have an efficient promotion effect. And the accuracy of the operation result can be controlled, the fault-tolerant effect is achieved, the rationality of operation is guaranteed, and the reliability of the channel is guaranteed.

#### 5.2 Cross Technology

The function of data cross transmission design is to realize the transmission of information in the double redundancy task management computer, so that the information can be shared between the two channels [4]. The data acquisition needs to be realized by simulation construction technology software, and the data can be propagated through the simulation manufacturing module, so that the redundancy software can receive the data without time difference, and analyze the data in order to diagnose its problems. In this way, it is very convenient to lock the fault cause and location of the problem in judging the validity of the data. And the transmission of data needs to be carried out in multiple channels, and the data is transmitted centrally to the management software. Realize feedback to ensure the smooth diagnosis and solution of the problem.

## 5.3 Voting Technology

The computer task management system is monitored by using the data input and output voting design, so that the signal of double redundancy can be maintained at each interface, so the

monitoring of the signal can capture the monitoring results well in the input voting monitoring. Simple monitoring can be carried out in the whole system to achieve the overall control effect, so in order to improve the accuracy of input and output voting monitoring, it is necessary to rely on the technology of its signal. Through the comparison of the difference between digital quantity and analog quantity and the input of discrete quantity, only in this way can we get more accurate results, ensure the normal operation of double redundancy management software, and make its technology work properly. The ideal effect can be brought into play by using the ideal effect brought about by it.

It is one of the general research directions in the future to improve the practical use value of redundancy technology. It is necessary to further strengthen the level of information construction, and make the connection between redundancy technology and task management computer system more compact. The value of redundancy technology can be further reflected, and the stabilization effect can be achieved by corresponding means. It can realize the key technology of redundancy technology, and can also play a role in promoting the development of key technology, so that its key technology can play more advantages and advantages, and improve its practical use value [5].

### 6. Conclusion

Combined with the above analysis, we can know that the use of redundancy technology is very critical in task management computer system. The future development of this technology can be further considered from the aspects of intelligence and functional diversification, and its development space and prospect can be improved in many ways and in many ways. The control of its key technology can realize the normal work and efficient management effect of redundancy management software. Through the analysis of its current situation and the understanding of system engineering process, we can fully understand how to realize the key technology, further promote the far-reaching development of redundancy technology, so as to makes the task management computer system more accurate and mature.

# References

[1] Wang, Yongguo., Deng, Daojie. (2019). In the second Armed Forces. Research on double redundancy Management Technology of Airborne Mechanical and Electrical system. Aeronautical computing technology, no. 3, pp. 95-98.

[2] Wang, Xiaoyong., Li, Xingzhi. (2019). Research on redundancy Control Technology of an Airborne Electronic Controller. Digital Communication World, no. 5.

[3] Wang Hengguo. (2015). Research on the redundancy design technology of electric control rotor control system. Nanjing University of Aeronautics and Astronautics.

[4] Yang, Nan., Wang, Yi. (2015). Research on the application of redundancy management technology for IMA-resident application. Avionics, no. 4, pp. 7-12.

[5] Basic, information, Zhu, Han., born in 1993, female, Han, working unit: Wuhan Institute of Industry and Commerce.