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DESIGN OF THE SPACECRAFT HEALTH MANAGEMENT GROUND SUPPORT SYSTEM BASED-ON BIG DATA

Abstract

Health management technology can reduce the various types of accidental risks of spacecraft in-orbit, and is a key technology to improve the reliability, maintainability, test-ability and safety of spacecraft. As the core of the entire spacecraft health management system, the health management ground support system mainly provides the data analysis, diagnosis, prediction and other services for the spacecraft technical personnel during the test, operation and management of the spacecraft. This paper presents a design of a ground support system for spacecraft health management based on big data, including component design of the health management ground support system, design of spacecraft health management big data system, design of the diagnosis and prediction system, etc. Through the construction of an application-oriented spacecraft health management engineering technology application system, it can provide the high-performance, high availability, high security platform and technical support for the design, test and management of the spacecraft, and ultimately improve the safety of the spacecraft (such as satellite, space station) and effectively reduce the life cycle costs of the spacecraft.