

# 机载嵌入式设备中故障管理机制的研究与实现

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**摘 要:** 介绍了一种新的机载嵌入式设备故障检测和故障记录的管理机制. 以符合 ARINC653 标准的国产实时操作系统天脉 2 和 PowerPC 系列处理器为软硬件平台, 对故障码动态注册、故障检测、故障记录和故障回放的运行机制进行详细阐述, 并设计了以中断功能和看门狗功能部件为例的工程实例. 实例结果表明, 该机制高效灵活, 且移植性良好, 对提高机载系统的安全性有较大的意义.

**关键词:** 机载系统; 故障管理; 故障记录; 故障码注册

## Fault Management Mechanism in Airborne Embedded Devices

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**Abstract:** A technique of fault management mechanism was proposed in this paper. Based on the platform of PowerPC series processor and the embedded real-time operating system AcoreOS653 which follows ARINC653 standard, this scheme includes four parts: dynamical fault codes registration, fault detection, fault recording and records check. An algorithm of the scheme was designed based on Interrupt functions unit and watchdog circuit. The results prove that the technique is effective and has good flexibility and portability. It is of great significance to improve the safety of airborne system.

**Key words:** airborne system; fault management; fault recording; fault codes registration

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