计算机工程与应用 2007 43 (26): 194-196 ISSN: 1002-8331 CN: 11-2127/TP

工程与应用

基于角色的飞机远程协同诊断并发控制技术研究

史永胜, 陈国兴

中国民航学院,天津 300300

收稿日期 修回日期 网络版发布日期 2007-8-29 接受日期

摘要 为了克服传统远程故障协同诊断存在的缺陷, 在以往飞机远程故障诊断模型研究基础上, 引入了协同合作机制。通过对协作过程中协作主体与任务之间相互关系的分析以及各协作主体在协作环境中空间位置关系研究, 提出了基于角色的飞机远程协同诊断并发控制模型。该模型能够动态地组建协作群体（虚拟工作组）, 在虚拟工作组内进行范围更大的交互和协作;通过对各角色和任务间动态考察, 采用加锁机制来协调各角色之间的关系, 从而有效地避免了各角色之间的冲突, 实现了各角色之间的高效协同和数据的实时传输, 并且使得诊断结果更加准确完整。

关键词 故障诊断 协同 并发控制 加锁机制

分类号

Study on remote collaborative diagnosis and concurrent controlling based on role in aircraft

SHI Yong-sheng,CHEN Guo-xing

Civil Aviation University of China,Tianjin 300300,China

Abstract

Based on the model of the remote fault diagnosis for aircraft,the mechanism of collaboration is proved to resolve the limitation of traditional fault diagnosis.The model on remote collaborative diagnosis and concurrent controlling based on the role in aircraft is brought forward through the analysis of the relationship between the collaborative colonies and the roles in the course of collaboration and the analysis of positions of all collaborative colonies in the environment of collaboration.Collaborative colonies（Virtual Groups of the tasks,VG） can be built dynamically and automatically in it,more alternation and collaboration can be achieved in VG.According to analysis of roles and tasks dynamically,the locking mechanism is adopted to harmonize the relationship of roles so as to avoid the conflict between roles,the roles can be collaborated and the data also can be changed each other easy.The result of the fault diagnosis is more exact and integrated.

Key words fault diagnosis collaborative concurrent controlling locking mechanism

DOI:

通讯作者 史永胜