

SPACE OPERATIONS SYMPOSIUM (B6)  
Mission Operations, Validation, Simulation and Training (3)

Author: Mr. Wang Hongfeng  
Mechanical Engineering College, Shijiazhuang, China, wanghongfeng@hotmail.com

AUTOMATIC CONTINGENCY SUPPORT OF GROUND SYSTEM FOR SATELLITE OPERATIONS  
AND DATA SERVICES

**Abstract**

Automation has been realized for TTC and data services under normal circumstances in many satellite ground systems. How technical staff has to be involved to tackle faults and anomalies. The emergency support performance depends on personnel's experience and ability heavily, and this will also introduce the risk of false operation and lower system availability. An automatic emergency support method is offered based on system state information and system redundancy. State parameters information of each sub-system and unit are received and processed according to the inherent connection among equipment function, fault mode and parameters. Fault diagnosis regulation database is established by associating parameter information and certain faults. Fault handling regulation database is also designed by linking faults and corresponding contingency support methods. And the contingency support methods can be carried out by created executable scripts. When an equipment fault occurs, the automatic monitor and control system will diagnose and run the corresponding contingency support script. By this way, swift anomalies and services ability recovery at system level are achieved. This will also shorten response time, reduce consumption of human resource and increase service availability.