

Resource Access Control in Real-Time Systems

- Resources, Resource Access, and How Things Can Go Wrong:
The Mars Pathfinder Incident
 - Resources, Critical Sections, Blocking
 - Priority Inversion, Deadlocks
 - Nonpreemptive Critical Sections
 - Priority Inheritance Protocol
 - Priority Ceiling Protocol
 - Stack-Based Protocols
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Mars Pathfinder Incident



- Landing on July 4, 1997
- “experiences software glitches”
- Pathfinder experiences repeated RESETs after starting gathering of meteorological data.
- RESETs generated by watchdog process.
- Timing overruns caused by priority inversion.
- Resources:

research.microsoft.com/~mbj/Mars_Pathfinder/Mars_Pathfinder.html

