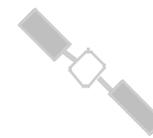
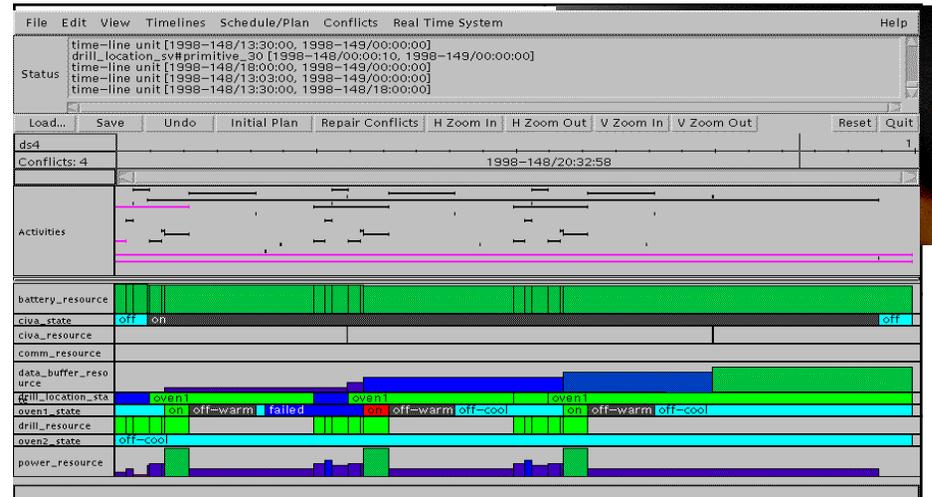


Advanced Planning and Sequencing



- **Develop, Demonstrate, and Transfer Technology to Automate Spacecraft Commanding**

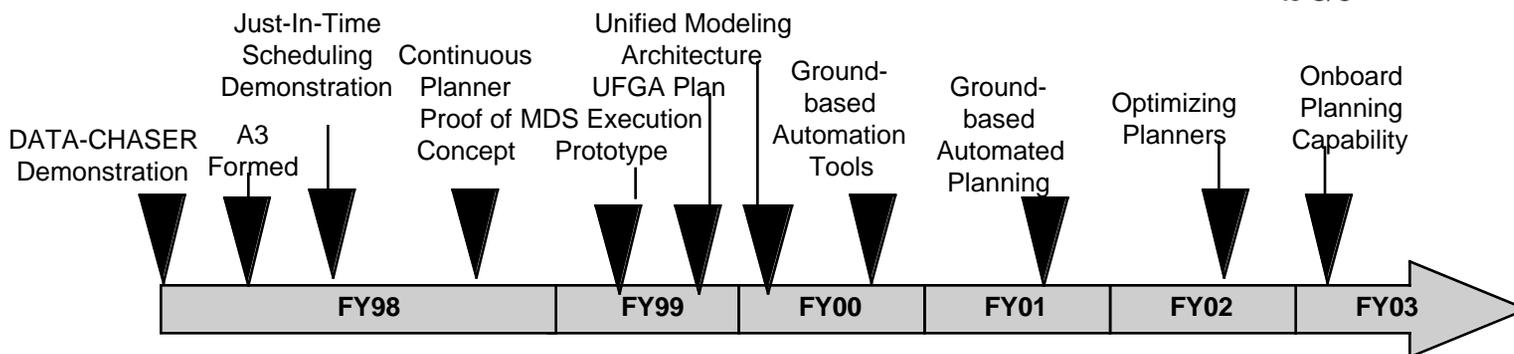
- Unified Flight Ground Architecture
- Integrated Planning and Execution Architecture
- Automated Ground-based and Onboard Planning
- Unified Modeling Architecture and Support
- Agent-based Architectures

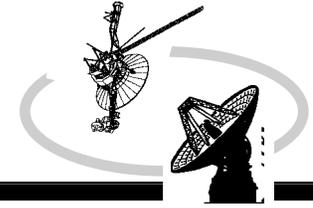


Goals Uplinked to S/C



Reduced Ops Team

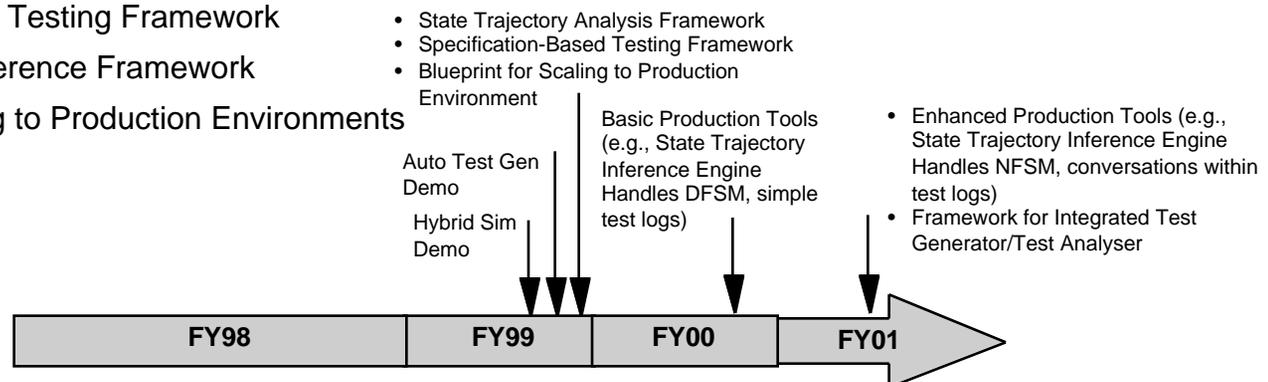
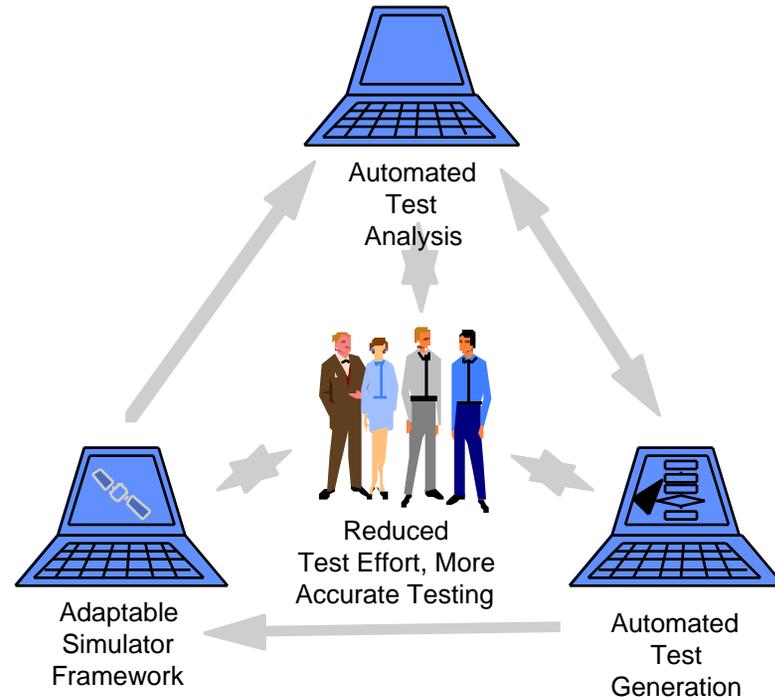


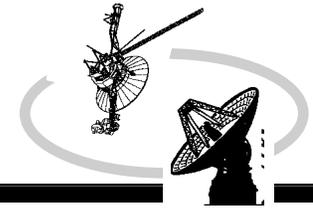


Integrated Test Environment

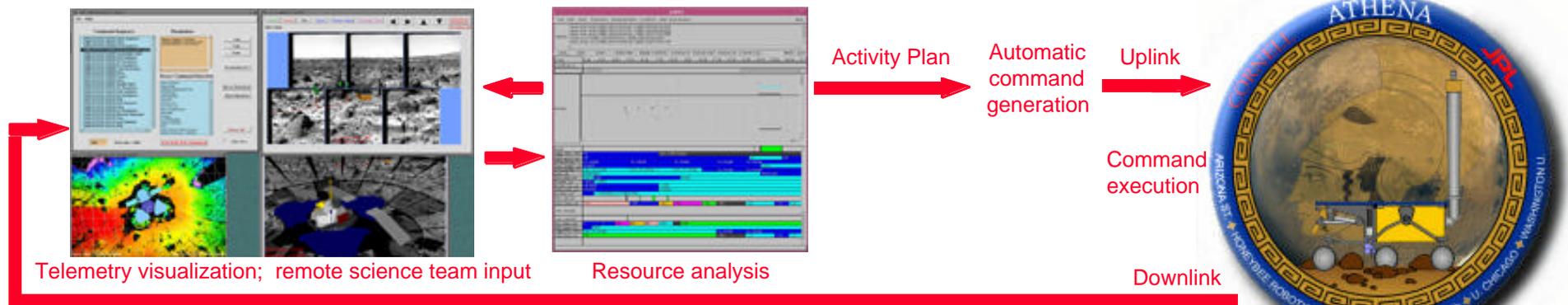


- **Develop and deploy an integrated test environment - Objectives**
 - Test spacecraft control software on high-fidelity, high-speed simulators to reduce cost and required testing effort.
 - Automate test case generation to maximize test coverage and reduce effort. Collaborate with TAP-funded task in developing test procedure generators.
 - Automate test result analysis to provide more accurate and detailed analysis of test results than is currently possible.
 - Specification-based testing
 - State Trajectory Inference
- **Products**
 - Adaptable Simulator Framework
 - Automated Test Generation
 - Automated Test Analysis
 - Specification-based Testing Framework
 - State Trajectory Inference Framework
 - Blueprint for Scaling to Production Environments





Rover Planning and Control



• Improve the rover mission operations process

- Reduce rover command sequence generation time
- Enable distributed science operations
- Decrease size of necessary operations teams
- Make possible long-term sustainable operations

• Technologies

- Internet-based science visualization and request generation
- Rapid conflict resolution within distributed team
- Automatic command generation
- Interactive resource modeling
- Migrate command generation from ground to rover

