Space Environments Testbed

Goddard Space Flight Center, Greenbelt, Maryland

The Space Environments Testbed (SET) is a flight controller data system for the Common Carrier Assembly. The SET-1 flight software provides the command, telemetry, and experiment control to ground operators for the SET-1 mission.

Modes of operation (see diagram) include:

- Boot Mode that is initiated at application of power to the processor card, and runs memory diagnostics. It may be entered via ground command or autonomously based upon fault detection.
- Maintenance Mode that allows for limited carrier health monitoring, including power telemetry monitoring on a non-interference basis.
- Safe Mode is a predefined, minimum power safehold configuration with power to experiments removed and carrier functionality minimized. It is used to troubleshoot problems that occur during flight.
- Operations Mode is used for normal experiment carrier operations. It may be entered only via ground command from Safe Mode.

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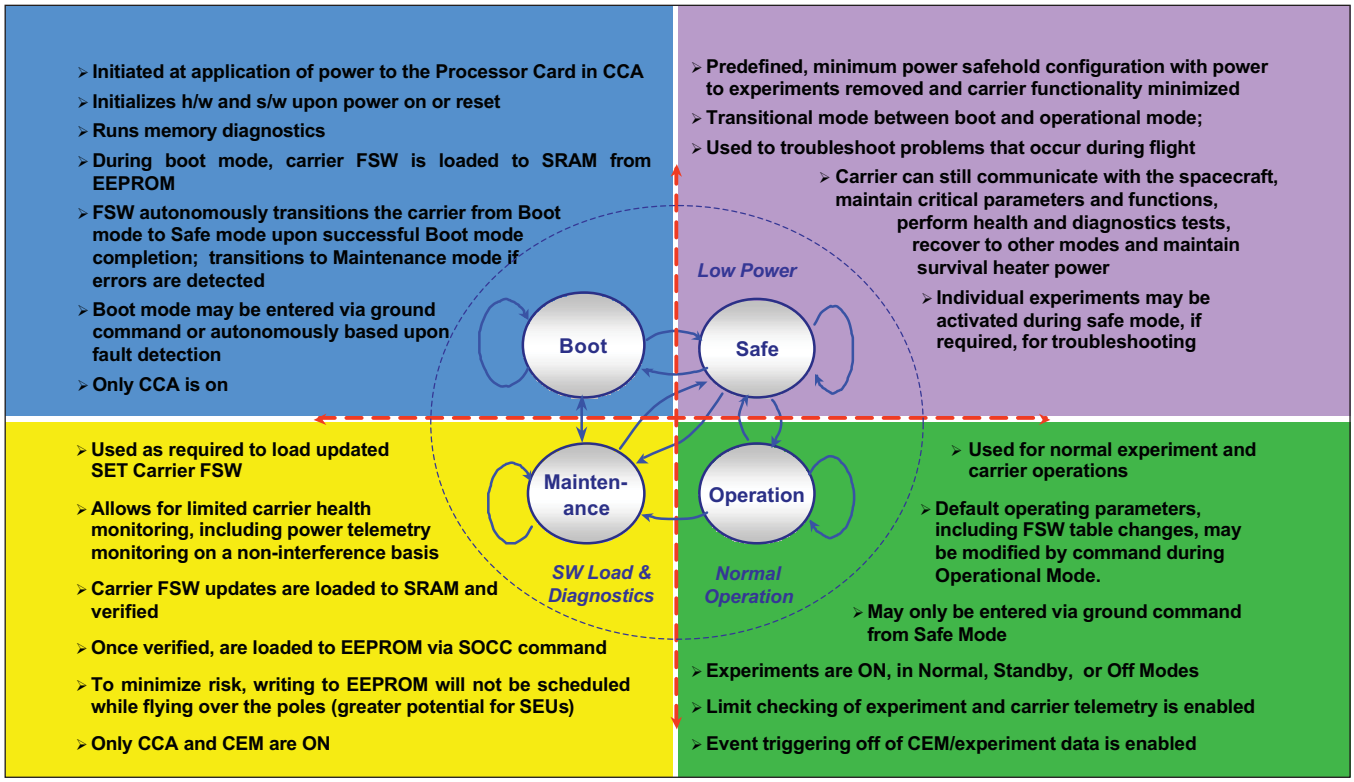
GSC-15821-1



Mode State Diagram.

High-Performance 3D Articulated Robot Display

NASA's Jet Propulsion Laboratory, Pasadena, California

In the domain of telerobotic operations, the primary challenge facing the operator is to understand the state of the robotic platform. One key aspect of understanding the state is to visualize the physical location and configuration of the platform. As there is a wide variety of mobile robots, the requirements for visualizing their configurations vary diversely across different platforms. There can also be diversity in the mechanical mobility, such as wheeled, tracked, or legged mobility over surfaces.

Adaptable 3D articulated robot visualization software can accommodate a wide variety of robotic platforms and environments. The visualization has been used