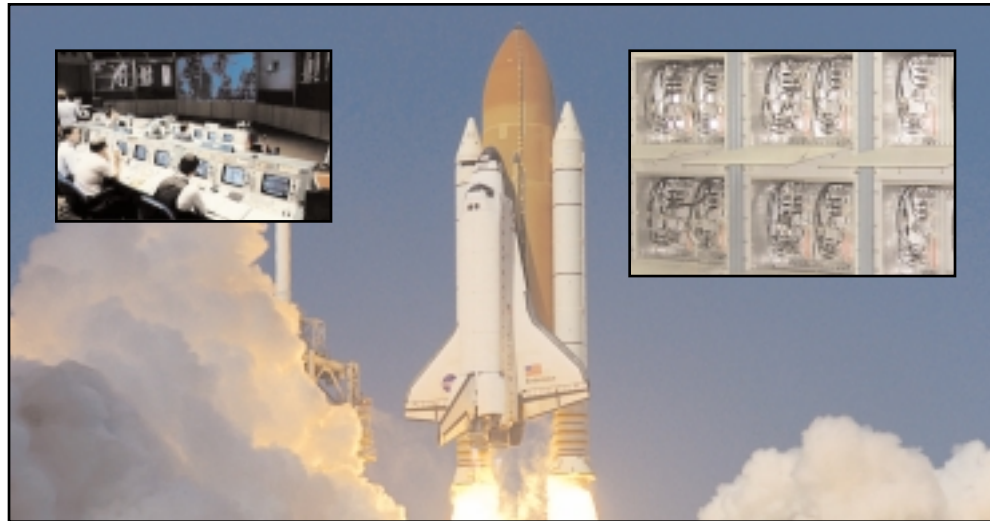


Application Note

Space Shuttle RPS

VMEwindow[®] Software Records and Monitors Shuttle Telemetry



The Record & Playback Subsystem (RPS) is an integral part of the infrastructure responsibility of United Space Alliance's (USA) Ground Operations Team at Kennedy Space Center. The Team is responsible for all Space Shuttle processing operations from landing through liftoff. These operations - called "The Flow" - take the Space Shuttle Vehicle (the Orbiter, External tank, and Solid Rocket Boosters) through a planned sequence of comprehensive tests, maintenance and verifications to make it ready for the next mission.

The flow includes thousands of tests which are performed on the Space Shuttle at different locations at KSC, including the Orbiter Processing facility (OPF), Vertical Assembly Building (VAB) and the launch pad. These tests verify the integrity of all systems - engines, avionics, electrical, hydraulic, mechanical, structural etc. - individually and then as a whole.

VMEwindow-based software is used to facilitate this testing by acquiring data from multiple PCM Telemetry sources, pre-processing and distributing the data for monitoring and analysis.

VMEwindow PCM Telemetry system software controls up to fifty-five real-time VME systems during Space Shuttle ground and launch phases

- *PCM Telemetry data is acquired, decommutated, time-stamped, processed and displayed in real-time*
- *VMEwindow uses SCRAMNet+ fibre-optic ring to support low-latency data sharing between many VME systems and workstations*
- *NASA software development team collaborated with AP Labs to add new capabilities to VMEwindow standard product*