

Perimeter Acquisition Radar Characterization System (PARCS)

The PARCS Product Line, under the System Engineering and Sustainment Integrator (SENSOR) contract, part of ITT Systems Division has recently completed a historic modernization deployment at Cavalier Air Station, North Dakota for Air Force Space Command.



PARCS is part of a large network of systems that support the Integrated Tactical Warning/Attack Assessment (ITW/AA) mission. PARCS is a computer-controlled, multi-function, phased array radar system that has a two-fold mission; missile warning and Spacetrack, which accounts for a majority of the current workload.

The PARCS system is exceptional and consists of a unique software suite that was designed specifically for the PARCS mission.

The SENSOR PARCS Engineering Team completed a critical upgrade and modification project consisting of both new developed hardware and software. PARCS Display Upgrade (PDU) was a \$5.6 million, 4 year, modification project to replace all the legacy Command and Control Display subsystem components responsible for displaying mission and system status information to the site operators. Graphic Display System (GDS) was a \$3.0 million software effort to provide latest software capability and updated user interface for the new display hardware.



PARCS consists of several critical processing groups and monitor and control subsystems that support the missile warning and space object identification missions. The original display subsystems and interfaces were becoming unsupportable and difficult to support. The primary purpose of the PDU project was to develop, engineer, and design a new hardware interface to replace the logic control buffer unit (LCBU), associated displays, teletypes, and dual system status display panels with new state-of-the-art displays. The software effort for the new displays was developed in parallel with PDU, and designed to have reusability for other SENSOR sites.

The new GDS software is a modern user interface. The new PDU will become one of the key aspects of the PARCS Evolutionary Modernization project.

The new PARCS displays provide significant improvement to missile warning, Spacetrack, radar, data processing (DP), and system exercise (SE) functionality. The PARCS Engineering Team deployed the new PDU and GDS system at site and it was operationally accepted by the US Air Force in July 2006.

Note: L-3 Engineering and Technical Services is a subcontractor to ITT providing overall configuration management, software engineering and logistics support to PARCS.