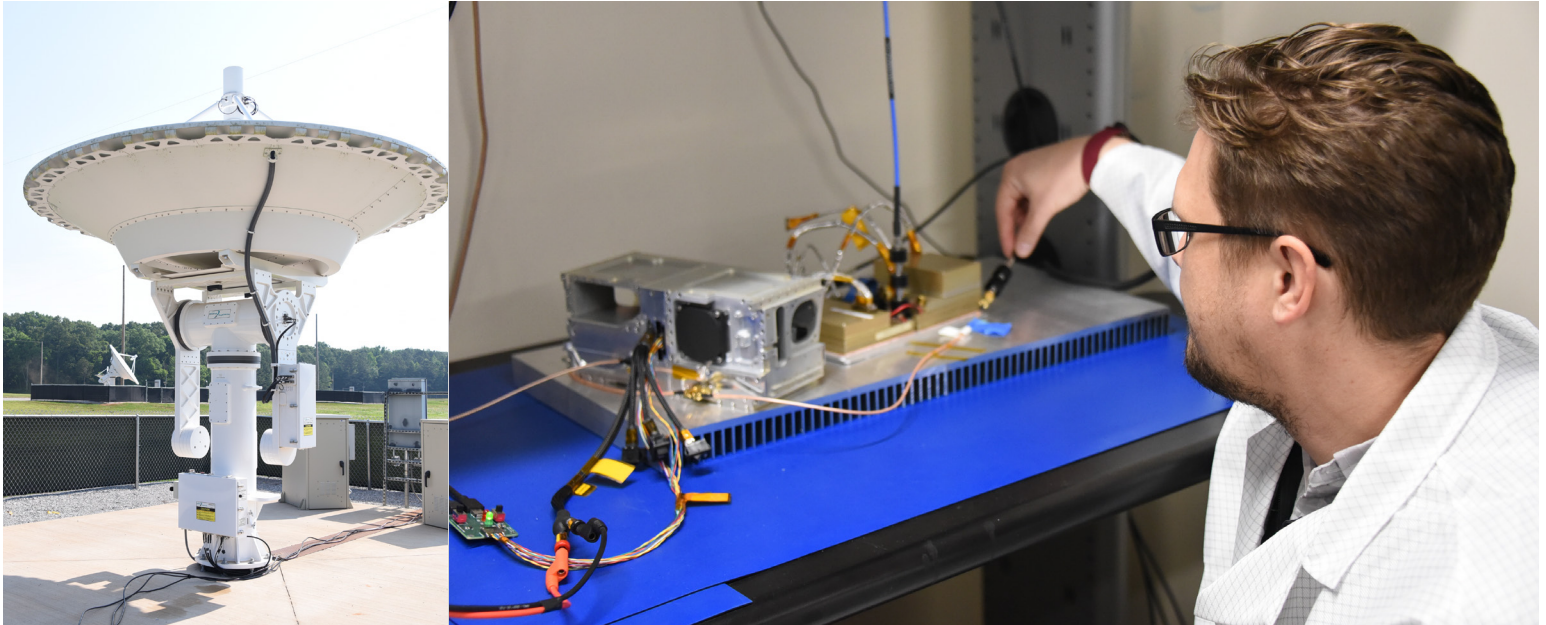


PAYLOAD DEMONSTRATION LABORATORY (PDL)



Providing ground station support to Army science and technology low Earth orbit small satellite technology demonstrations

The Payload Demonstration Laboratory was established in 2017 to centralize command, control and telemetry ground infrastructure into a shared architecture among U.S. Army Space and Missile Defense Command Technical Center small satellites and payloads. The PDL is an economical and low technical risk SMDC-developed resource to enable inexpensive Army payload demonstrations. Its mission is to provide rapid reliable customer support for Army science and technology tactical low Earth orbit small-satellite program demonstrations to validate capabilities in an operational space environment. The PDL core competencies focus on planning, supporting, and conducting small-satellite on-orbit payload demonstrations. Its world-class staff, facilities and ground infrastructure provide LEO small satellite telemetry, tracking and command for multiple programs.

- Supports USASMD C small satellite program payloads on-orbit demonstrations with complete TT&C ground station functions
- Provides a proven ground station capability, reducing cost and risk for programs
- Provides early design, integration and test capability to the program
- Supports end-to-end checkout with spacecraft or flat-sat
- Provides training and familiarization to reduce risk once on-orbit
- Provides dedicated access to antenna reducing scheduling conflicts



Established in 2017, the Payload Demonstration Lab centralized command, control and telemetry ground infrastructure into a shared architecture among U.S. Army Space and Missile Defense Command Technical Center small satellites and payloads. The PDL is an economical and low technical risk USASMDC-developed resource that enables cost effective Army payload on-orbit demonstrations.

The PDL-related Redstone Antenna Complex was commissioned in May 2019. The antenna farm provides direct connection to the PDL and provides dedicated ground entry points for each program thus reducing the conflicts for satellite ground passes.

The PDL's mission is to provide rapid reliable customer support for Army science and technology tactical low Earth orbit small-satellite program demonstrations

to validate capabilities in an operational space environment. The PDL core competencies focus on planning, supporting and conducting small-satellite on-orbit payload demonstrations. The PDL can also support enduring follow-on or residual support once the contracted demonstration period is concluded.

The PDL provides ground station simulators for program use and integration thus virtually eliminating the risk of incompatibilities once on-orbit. Once the integration and build up phases are complete, the PDL hosts the space vehicle on-site to execute an end-to-end test that exercises the on-orbit checkout and day-to-day operation procedures. This fosters improvements and gained efficiencies that assist in maximizing the demonstration goals and objectives during the relatively short on-orbit phase. During this checkout,

crew training in a very realistic environment is finalized, which also reduces the team stress and risk of operator error.

Its world-class staff, facilities and ground infrastructure provide LEO small satellite telemetry, tracking and command for multiple programs. The PDL has proven itself to be a valuable resource for the execution of the U.S. Army Small Satellite Strategy.

The PDL has also successfully supported programs not directly affiliated with USASMDC small satellite efforts. After request approvals, the PDL has downloaded data files from other satellite platforms in support of other U.S. Army interests and investigations. The antenna farm is currently hosting other assets that support other government agencies directly. The PDL team supports with integration and installation as well as maintenance and local support, as needed.



For more information, please contact: USASMDC Public Affairs Office

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