

SATELLITE SOFTWARE SYSTEMS

Software is an integral part of any satellite system. From ground operations software and terminal control to software-defined radio and on-orbit flight software, the Space Dynamics Laboratory (SDL) provides elegant and open solutions for the DoD, NASA, National Science Foundation, and other Government customers. Built on modern software technologies, SDL's software is GMSEC-compliant and free for Government use.

SDL's software proficiencies include the following:

- Web development
- Modeling & simulation
- Signal & data processing
- Cloud computing environments
- Machine learning & artificial intelligence
- Algorithm development
- Satellite flight software
- Networking & dissemination software

SDL develops its software systems in compliance with its ISO 9001 registered Quality Management System procedures. The Lab is adaptable to changing requirements and budgetary constraints. At SDL, delivering on time and within budget is the rule, not the exception.



FLIGHT SOFTWARE

Radiant is SDL's fully reusable core flight software solution. For compatibility with various architectures and systems, SDL developed Radiant without ties to specific hardware platforms. Radiant's modular architecture enables users to easily interface with mission-specific applications, hardware, and ground test equipment without core code modification. Radiant runs on a real-time Linux environment and can be ported to other operating systems.



GROUND TERMINAL CONTROL SOFTWARE

SDL develops ground terminal control software, including antenna pointing, satellite tracking, software-defined radios, pass scheduling, system health and status monitoring, and automated terminal operations. Built on common web standards and messaging protocols, SDL's software is easy to deploy and operate. SDL is experienced with ground compatibility testing with various ground terminal networks and offers complete system implementation and management.



SATELLITE COMMAND & CONTROL SOFTWARE

SDL's satellite command and control software includes a suite of operations tools and individual applications that run within a common web framework. The software includes a satellite planner, autonomous operations, data management and processing, alert system, and facility monitor. The extensible design enables users to employ the software development kit to write custom plugins for mission-specific needs.



SATELLITE OPERATIONS

SDL provides mission operations in direct support of the Nation's most complex satellite programs. Operation functions include pre-launch integration, mission rehearsals, daily contact planning, real-time commanding, experiment plan execution, mission data processing, state-of-health monitoring, and data dissemination. SDL leverages its capabilities in designing and building systems to optimize mission operations.

SATELLITE SOFTWARE SYSTEMS

END-TO-END SPACE SOFTWARE SYSTEMS

For over six decades, SDL has delivered products and services that enable smarter decisions through data collection and analysis for science and military applications. Customers depend on SDL's expertise, experience, and end-to-end satellite software capabilities and services to achieve mission success. SDL's software for space segment, ground systems, and satellite operations is open and free for Government use.

