

# SATELLITE SOFTWARE SYSTEMS

Software is an integral part of any satellite system. From ground operations software to terminal control and software-defined radio to on-orbit flight software, the Space Dynamics Laboratory (SDL) provides elegant and open solutions for the DoD, NASA, NSF, and other US Government customers.

Built on modern software technologies, SDL's software is GMSEC-compliant and free for Government use. SDL's software proficiencies include:

- web development
- modeling & simulation
- signal & data processing
- cloud computing environments
- machine learning & artificial intelligence
- algorithm development
- satellite flight software
- networking & dissemination software

Practicing an ISO-9001-certified hybrid of waterfall and agile software development processes, SDL is adaptable to changing requirements and budgetary constraints. At SDL, delivering consistently on time and within budget is the rule, not the exception.



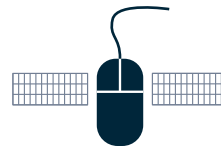
## FLIGHT SOFTWARE

Radiant is SDL's fully reusable core flight software solution for small spacecraft. 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.



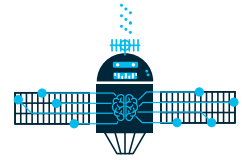
## GROUND TERMINAL CONTROL SOFTWARE

SDL develops ground terminal control software, including antenna pointing, satellite tracking, software-defined radios, 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. SDL also assists customers with system integration, accreditation, and administration.



## 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 use the software development kit to write custom plugins for mission-specific needs.



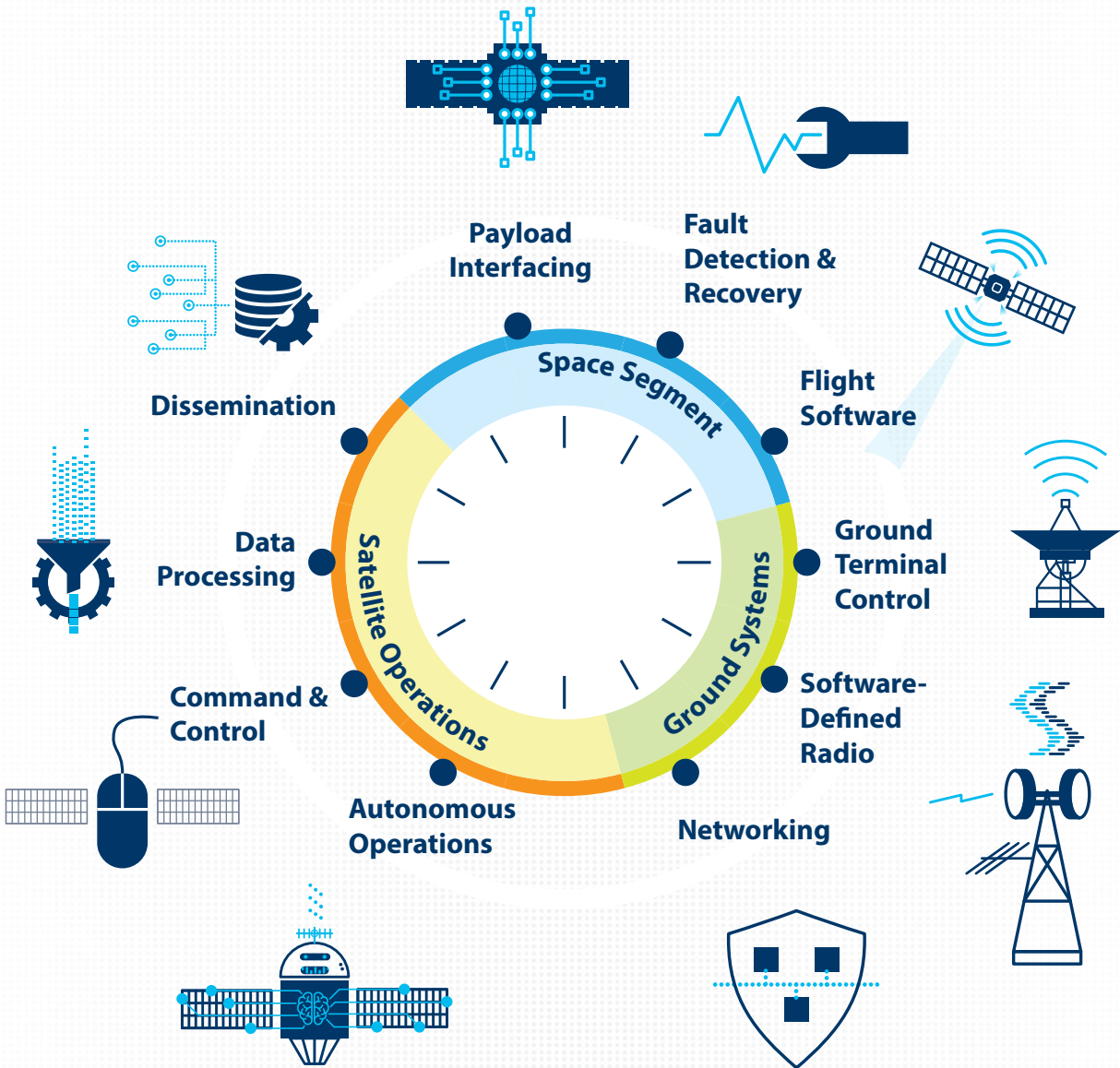
## SATELLITE OPERATIONS

SDL provides satellite mission operations in direct support of NASA, NSF, and the DoD. 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 our capabilities in designing and building systems to optimize mission operations.

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## END-TO-END SPACE SOFTWARE SYSTEMS

SDL has been delivering products and services to enable smarter decisions through the collection and analysis of data for science and military applications for over six decades. Customers depend on our expertise, extensive 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.



**Space Dynamics**  
LABORATORY  
Utah State University