MISSION DATA & ANALYTICS

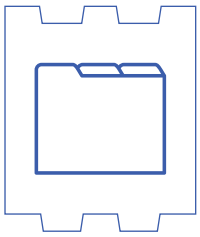
Transforming Data into Decisions

The Space Dynamics Laboratory (SDL) delivers robust data systems that drive civil and defense space missions. SDL provides the integrated mission data processing systems, algorithms, analytics, and application security needed to organize, understand, exploit, and protect large data volumes. With our solutions, mission teams transform their data into timely, actionable knowledge.

CAPABILITIES

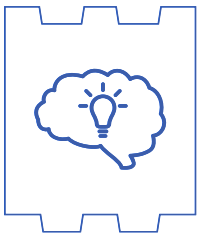
SDL's data scientists and software engineers have the experience and expertise to deliver complete mission data systems.

- Comprehensive knowledge system development, applying leading-edge methodologies
- Expertise in digital signal processing (DSP), computational statistics, artificial intelligence (AI) & machine learning (ML)
- Quick-turn data processing, manipulation & fusion from various sources
- Powerful data visualization, user experience (UX) & user interface (UI)
- DevSecOps & systems security embedded in design
- Fast, accurate & reliable solutions from a trusted Government partner



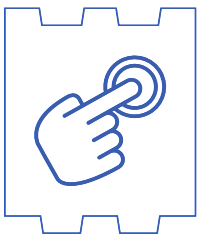
ORGANIZE

- Modular open system frameworks
- Cloud-native engineering
- DSP algorithm development



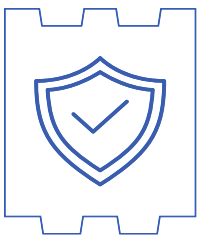
UNDERSTAND

- UX/UI engineering & data visualization
- Data fusion
- Synthetic scene generation



EXPLOIT

- Near-real time processing
- AI & ML enhancements & custom algorithms
- Analyst-ready products



PROTECT

- Application focus: DevSecOps principles embedded in design
- Custom cybersecurity tools & system assessments
- Continuous authority to operate

UTAH STATE UNIVERSITY
SPACE DYNAMICS LABORATORY®

416 East Innovation Avenue | North Logan, Utah 84341 | info@sdl.usu.edu | www.sdl.usu.edu

SDL/21-2751 Rev. A

MISSION DATA & ANALYTICS Transforming Data into Decisions

Organize the data. SDL builds all knowledge systems as modular open system frameworks that are easily tailored to mission requirements and are ideal for high-volume, high-bandwidth, tactical, and strategic data processing. Users can create customized workflows using predefined and custom components. SDL's cloud-native engineering process ensures a continuous integration pipeline to help move our customers toward continuous delivery.

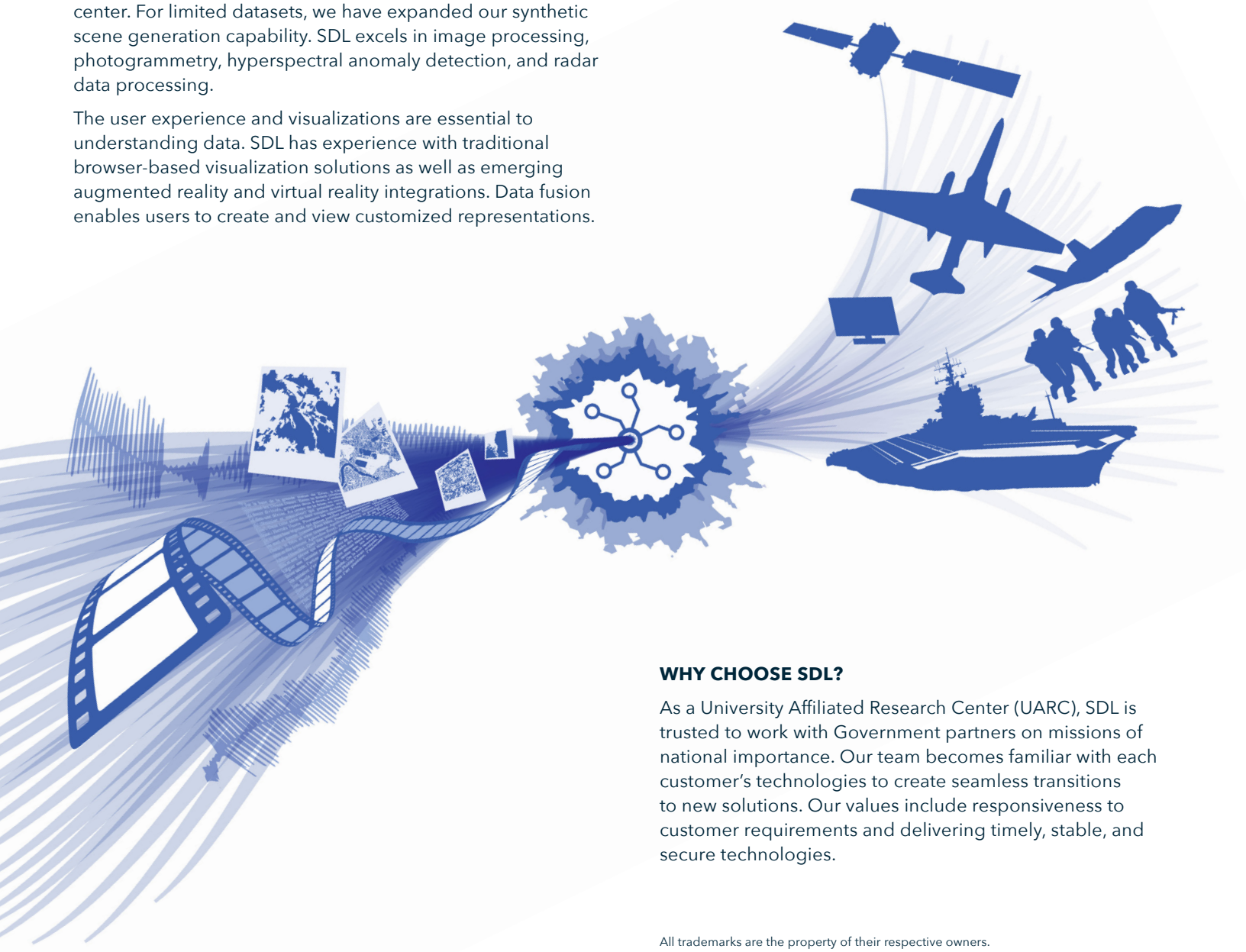
We extended our knowledge system framework to provide a direct interface between experimental MATLAB® algorithms and hardware components for a flexible, medium-fidelity modeling and simulation environment.

Understand the data. SDL employs leading-edge DSP techniques to prepare and make sense of data, either directly adjacent to the system's sensor or downstream in the data center. For limited datasets, we have expanded our synthetic scene generation capability. SDL excels in image processing, photogrammetry, hyperspectral anomaly detection, and radar data processing.

The user experience and visualizations are essential to understanding data. SDL has experience with traditional browser-based visualization solutions as well as emerging augmented reality and virtual reality integrations. Data fusion enables users to create and view customized representations.

Exploit the data to create knowledge for decision-making. SDL's advanced analytics team creates actionable insights that lead to value-added decision-making by applying sound statistical analysis, AI, and ML methodologies to complex datasets. We strive to create accurate and trustworthy results that stakeholders want while providing transparent demonstrations of the employed analytical techniques.

Protect the pipeline. SDL is focused on protecting data and knowledge-generating applications. Our cybersecurity specialists leverage National Institute of Standards and Technology (NIST) Systems Security Engineering principles in design and use DevSecOps principles to secure the software supply chain. Our goal is to help customers achieve continuous authority to operate (cATO).



WHY CHOOSE SDL?

As a University Affiliated Research Center (UARC), SDL is trusted to work with Government partners on missions of national importance. Our team becomes familiar with each customer's technologies to create seamless transitions to new solutions. Our values include responsiveness to customer requirements and delivering timely, stable, and secure technologies.

SDL