



Mission Software Systems

MODERNIZING AND INTEGRATING LEGACY SYSTEMS

Legacy software solutions are often costly to maintain and cannot keep pace with evolving user needs, dynamically changing requirements, and complex environments. Many organizations need to modernize these legacy systems and integrate new technology, all while adhering to strict timelines and budgets.

Our Mission Software Systems are designed to manage complexity in environments that require security, precision, speed, and scale in equal measure. Leidos brings experience that spans multiple market sectors, transforming operations in defense, healthcare, civil, and intelligence communities.

OUR APPROACH

Through disciplined processes, common tools, reusable frameworks, automation, collaboration, and domain expertise, Leidos designed our Mission Software Systems to deliver secure, mission-quality software at Silicon Valley speed. Our SecDevOps approach puts security first and foremost, and our data-centric design and analytics create secure systems that reduce lifecycle maintenance and development costs. Our approach enables continuous testing of new technologies and accelerated delivery of innovative solutions.

OUR CAPABILITIES

Our team of mission-focused experts brings an established record of delivering agile, game-changing solutions, which include the following:

Command, Control, and Intelligence Systems

We deliver the next generation of cohesive mission command solutions that enable decision-making functions for defense, intelligence, and homeland security. We rapidly develop, modernize, and integrate mission-critical, warfighter-focused command and control (C2) systems. Our systems are built with open architectures coupled with large-data data-driven solutions—resilient and survivable with limited communications—delivered responsively and based on validated modeling and simulation.



We deliver solutions that provide unparalleled understanding and support vital communications:

- ▶ Army Fires systems
- ▶ Aviation safety systems
- ▶ Autonomy and Autonomous technologies
- ▶ Cargo, vehicle, and people screening technologies
- ▶ Chemical, Biological, Radiological, and Nuclear Explosives (CBRNE) models
- ▶ Common Operational Picture (COP) technologies
- ▶ Electronic Warfare (EW)/Cognitive EW systems
- ▶ Full motion video exploitation and intelligence systems
- ▶ Global security detection technologies
- ▶ Hospital and health systems
- ▶ Integrated base defense program
- ▶ Joint All-Domain Command and Control (JADC2)
- ▶ Mission planning systems
- ▶ Modeling, simulation, and training systems
- ▶ Strategic mission planning systems
- ▶ Tactical Data Links (TDL) toolset
- ▶ Wing-and-squadron-level C2 systems.

Data Science and Engineering

We combine our deep mission expertise with tailored analytic systems, such as data and predictive analytics; data mining and analysis; artificial intelligence (AI) and machine learning (ML); healthcare analytics; data visualization; and engineering—to turn that data into valuable knowledge and insights for our customers. Our disciplined approach combines cutting-edge technology that makes algorithms reliable, resilient, and secure with tools that increase human trust by providing transparency and eliminating bias.

Leidos Enterprise Application Foundry

Building tailored or adapting off-the-shelf software can be cost-prohibitive and impede integration and adaptation as new technologies emerge. The Leidos Enterprise Application Foundry (LEAF) provides a reusable and extensible framework that allows for rapid prototyping and delivery of new applications across markets. In combination with Agile and SecDevOps processes, LEAF helps Leidos build complex, custom software solutions better, faster, and more cost-effectively.

Leidos Software Factories

Leidos uses our worldwide Software Factories to develop and innovate high-quality applications quickly and at low cost using industry-leading Agile and SecDevOps practices and tools. This approach is proven to reduce fielding cycles and modernize applications three times faster than using traditional methods. We have extensive experience modernizing legacy applications into scalable microservice architectures—using proven continuous integration/continuous delivery pipelines—and deploying applications in customer-preferred environments (from on-premises to full cloud deployment).

Survey Analysis and Area-Based Editor

Survey Analysis and Area-Based Editor (SABER) provides an end-to-end hydrographic data processing solution for large data sets that leverages open-source file formats throughout the entire workflow. SABER is designed to efficiently and accurately display, process, and archive very large data volumes associated with hydrographic surveys. It also provides a standardized processing flow to deliver consistent results and helps streamline the effort required to produce data products in the shipboard environment.

Synthetic Environment Core

Synthetic Environment Core (SE Core) provides fully correlated terrain databases enabling interoperability within live, virtual, constructive, and gaming training systems to enable warfighters to train as they would operate in forward-deployed environments. SE Core provides the Common Virtual Environment (CVE) correlated terrain databases for military training systems to enable interoperability, reduce developer cost, improve schedule time, and help ensure that simulators and simulations correlate and interoperate across critical training platforms. The SE Core CVE delivers:

- ▶ Geospatial terrain databases
- ▶ Common cultural and moving models
- ▶ Common Virtual Components (CVC)
- ▶ Simulation standards
- ▶ Federal Aviation Administration (FAA) standard airfield.

Tactical Data Link

The Leidos Tactical Data Link (TDL) toolset consists of a unique set of software applications to support the engineering testing cycle for TDLs, from requirements capture; terminal control; monitoring and recording; real-time message analysis; post-mission analysis; and overall through-life TDL requirements management. Our TDL products include:

- ▶ **MANDRIL:** Interprets and analyzes message data CIVET flows within multiple TDLs
- ▶ **PUMA:** Provides a real-time independent capability to control, monitor, and record data from a PUMA Multifunctional Information Distribution System (MIDS) Low Volume Terminal (LVT)
- ▶ **TIGER:** Is a powerful battlespace data link simulator with a flexible array of additional analysis
- ▶ **CIVET:** Provides user pre-configurable, automated, and targeted near-real-time Link 16 and Link 11 CIVET message decode, validation, and evaluation analysis
- ▶ **eSMART:** Seamlessly integrates with iSMART—the U.S. and UK mandated (and widely used) process for TDL interoperability assurance.

FEATURES

- ▶ Proven and mature Agile development and SecDevOps processes and tools
- ▶ Agile, cutting-edge software development
- ▶ Reusable components that minimize new development
- ▶ Reusable frameworks
- ▶ Automation and collaboration
- ▶ Domain expertise
- ▶ Cross-functional staff with varying expertise and experience levels that can be matrixed into projects
- ▶ Cleared personnel working in secure facilities

BENEFITS

- ▶ Increases the delivery speed of new capabilities and embeds quality and security into our solutions
- ▶ Modernizes applications faster
- ▶ Reduces development time and costs by reducing need for boilerplate code
- ▶ Enables programs to adapt quickly to changes without increasing cost or schedule
- ▶ Reduces risks on program execution by using a proven solution
- ▶ Increases speed and agility
- ▶ Provides extensive knowledge base
- ▶ Maximizes budget by engaging subject matter experts only as needed
- ▶ Offers flexibility across classification levels at competitive rates



PROVEN SUCCESS

Software Factories and LEAF

We currently support dozens of customers and diverse industries—from global airbase management to autonomous systems to commercial healthcare products.

U.S. Government Agency/U.S. Military Branch

- ▶ Modernized three mission-critical applications for a U.S. military branch in one-third of the time estimated by the Government (3x faster)
- ▶ Reduced fielding cycle on mission-critical application from over 2 years to under 2 weeks
- ▶ Modernized a legacy application in 4 months—replaced previous application and reduced mission-critical operator tasks from hours to seconds, resulting in 83% faster performance
- ▶ Reduced more than 250 user interfaces (UIs) to 80 in a legacy application in under 3 months, resulting in 68% fewer windows/UIs and a more productive workforce
- ▶ Switched databases on a fielded system in 48 hours, removing license costs and resulting in faster, more affordable operations for the agency
- ▶ Provided the foundation of the enterprise network systems, services, and support contract portal, enabling users to monitor the status of information technology (IT) assets across the enterprise as well as streamlining the workflow for IT service requests
- ▶ Modernized IT solution that provides a live, fused COP shared in real time from tactical commanders to the strategic level, offering vital connectivity to systems used to plan, execute, and manage military operations for both joint and multinational operations
- ▶ Processed an average of 300,000 transactions per day with 99.6% fingerprint accuracy with Next Generation Identification (NGI)
- ▶ Reduced fielding timelines up to 90% by building tools that can be used across multiple different functions
- ▶ Provided extensive suite of JADC2 solutions, including participation in multiple Advanced Battle Management System (ABMS) on-ramp exercises

Commercial Healthcare

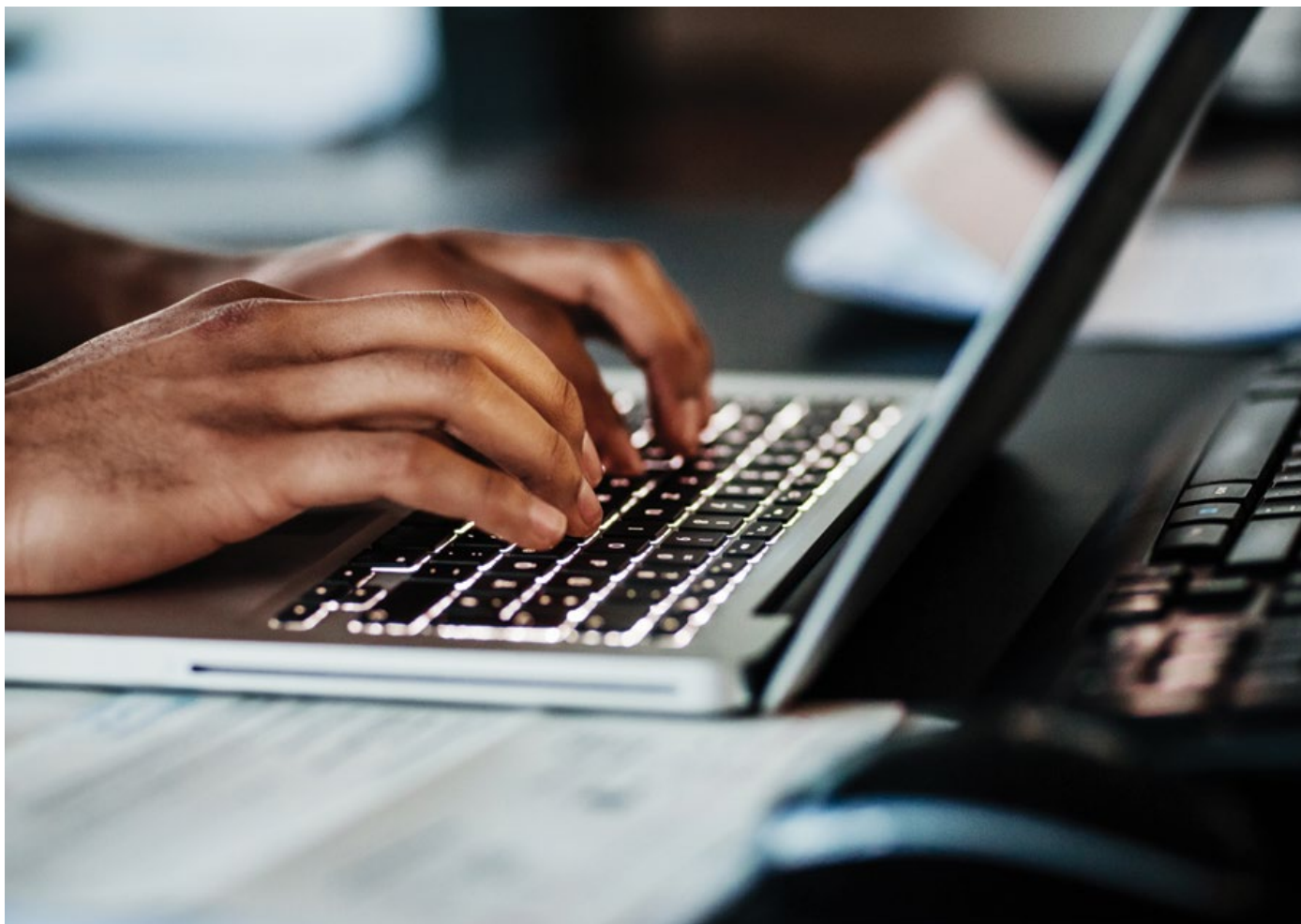
- ▶ Delivered a cloud-hosted healthcare application in less than 5 months from contract signing, using a SecDevOps pipeline to make healthcare more accessible, affordable, and efficient
- ▶ Delivered a new healthcare application in less than 3 months, resulting in an estimated \$22 million in savings to the hospital in the first year

WHY PARTNER WITH LEIDOS

Many organizations need to modernize their legacy software systems and integrate new technology while adhering to rigorous timelines and budgets. Our Mission Software Systems are designed to manage this type of complexity in environments where security, precision, speed, and scale are vital.

NEXT STEPS

Organizations are increasingly faced with developing new software systems, and updating legacy software quickly and within budget. Contact our software development experts to determine if Leidos Mission Software Systems are the right solution for your organization.



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