

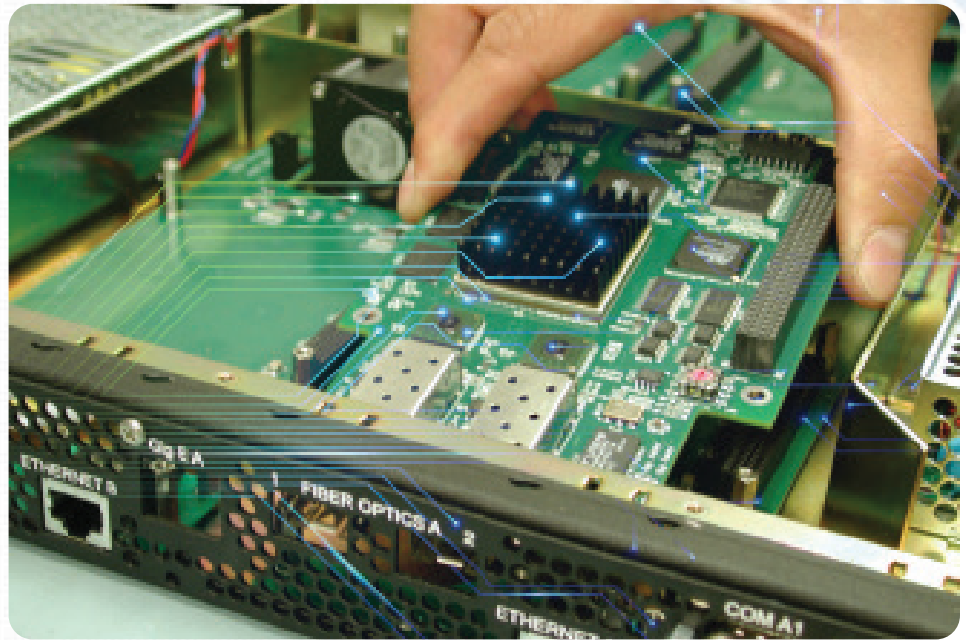
# RESET SERVICES

RE-ENGINEERING, SYSTEM ENGINEERING & TEST SERVICES

The Space Dynamics Laboratory (SDL) provides cost-effective Re-Engineering, System Engineering, and Test (RESET) services for Government flight and ground-based hardware systems. Geographically located close to Hill Air Force Base, SDL possesses over 60 years of experience in complex system development and test.

The DoD is migrating toward organic maintenance capability to reduce costs. However, effective testing is often hindered by missing documentation and inadequate board test systems. Additionally, as platform lifecycles extend by decades, obsolete assemblies must be replaced with little knowledge of their original design. SDL's RESET services overcome these challenges by cost-effective development of depot-level maintenance capabilities and seamless technology insertion solutions.

SDL's RESET services are backed by the larger SDL organization for additional manpower and expertise. As a non-profit University Affiliated Research Center (UARC), SDL provides the Government with unlimited rights on all project deliverables, including production-ready technical data packages. SDL's size enables accessible contract communication and execution, and our ISO 9001 certification is indicative of our commitment to high-quality engineering practices.



## RE-ENGINEERING, SYSTEM ENGINEERING & TEST (RESET) SERVICES

### RE-ENGINEERING

Generate unavailable technical data packages

- Tear down & re-engineer components
- Create mechanical drawings, Gerber files, parts lists & obsolescence information
- Create technical manuals
  - Depot maintenance overhaul instructions
  - Illustrated parts breakdowns

### TECHNOLOGY INSERTION

Enhance electronic board functionality

- Form & fit redesigns of existing boards
- Update designs for increased functionality & maintainability

### BOARD REPLACEMENT

Develop electronic board replacements

- Engineer form, fit & function replacements for obsolete or difficult to test boards or systems
- Deliver specification, drawings & assembly procedures suitable for outside procurement

### SYSTEM TEST DEVELOPMENT

Create testing platforms enabling organic testing

- Develop test program sets (TPS) for organic electrical & functional testing
  - Stand-alone or interface test adapters (ITA)
  - Software- & hardware-based tests

# RESET SERVICES

## EXAMPLE PROJECTS

### DEPOT SUPPORT—F-16 FLIGHT DISPLAY UNIT RE-ENGINEERING

SDL re-engineered the F-16 Display Unit subassemblies, including the common color multi-function display (CCMFD), color programmable display generator (CPDG), and enhanced CPDG, providing the Air Force with the technical data package and associated shop manuals to support depot-level activities of the F-16 flight display.

In addition to re-engineering the electrical and mechanical subsystems, SDL created TPSs to support depot troubleshooting and repair. SDL built ITAs and integrated them into the Air Force's testing platform. The TPS package included the ITA hardware and software, an acceptance test strategy, the ITA technical data package, and associated technical orders to support the TPS. SDL was awarded the F-16 project based on cost-effective delivery of high-quality engineering services. SDL continues to support the Government through subassembly modernization and depot test stand-up efforts.



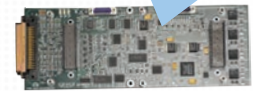
F-16 Display ITA

### FLIGHT SYSTEMS—P4R1 REPLACEMENT

To assist the Air Force in establishing organic repair capability and to support future procurements of the P4R1 flight subsystem, SDL re-engineered its advanced digital interface unit (ADIU) and intelligent flash solid state recorder (IFSSR) assemblies and delivered form, fit, and function direct replacements of the existing assemblies. SDL redesigned the electronics but maintained the housing and functional operation for seamless insertion into the existing pod. SDL's continued involvement in pod-related re-engineering/redesign efforts has evolved to include updates to implement a secure operating system to support data encryption and other future security requirements.

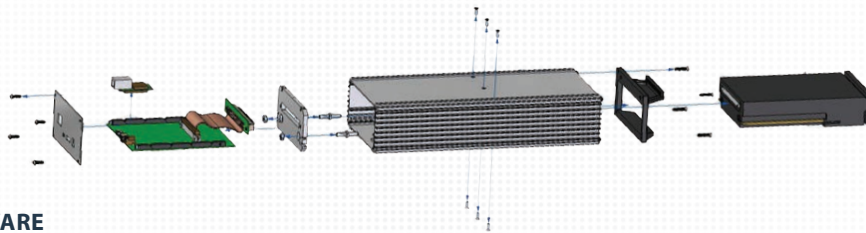


ADIU



### GROUND SYSTEM TECHNOLOGY INSERTION

Providing a vital function in supporting flight control systems, SDL re-engineered a solid-state data cartridge reader, creating a replacement unit with enhanced capabilities that supports several existing cartridges. The cartridge reader was designed with modest procurement costs in mind to aid the Government in reaching its objective of replacing, rather than repairing, obsolete and failing units. SDL has redesigned cartridge readers for various platforms for the Air Force and Navy branches.



### MISCELLANEOUS HARDWARE

SDL's knowledgeable staff performs a wide array of system testing and repair using our extensive electronics, machining, and logistics facilities. SDL works with customers to determine if a subassembly needs to be redesigned for improved capability/maintainability or modernized to remove obsolescence, then recommends the most cost-effective solution.

SDL welcomes all inquiries.  
For more information, please contact:

**Doug Jewell**, Branch Head  
**Matt Cupal**, Program Manager  
**Bennett Keller**, Program Manager  
**Shawn Nielson**, Program Manager

Phone 435.713.3930 • [engineeringssupport@sdl.usu.edu](mailto:engineeringssupport@sdl.usu.edu)

**Space Dynamics**<sup>™</sup>  
LABORATORY  
Utah State University

1695 North Research Park Way • North Logan, Utah 84341 • Phone 435.713.3400 • [www.sdl.usu.edu](http://www.sdl.usu.edu)