SDL is headquartered in an 11-building, 220,000 ft² research complex near the USU campus in Logan, Utah. As part of this complex, SDL houses full service fabrication facilities, including a comprehensive machine shop and laboratories for full optical, mechanical, and electrical system design and assembly. The research complex also includes offices, conference space, computing facilities, ISO 5 clean rooms with full contamination control services, high-bay integration areas, environmental test facilities, calibration and characterization facilities, and a mission control center.

Because SDL’s facilities include on-site precision manufacturing and fabrication capabilities and equipment, our customers receive the following benefits:

• Shorter turn-around time
• Lower cost
• Increased collaboration between engineers, designers, and fabrication and AI&T specialists resulting in higher risk mitigation

**On-Site Fabrication**

SDL’s in-house machine shop offers 6000 ft² of modern fabrication equipment. All hardware not procured from selected vendors is fabricated on site.

**Features:**

• Computer numeric control (CNC) machine capability
• Computer-aided precision machining (CAM)
• State-of-the-art 3D milling machines
• 5th axis rotary table
• Electrical discharge machining (EDM)
• Vast in-house materials inventory to meet immediate requests
• Two coordinate measuring machines (CMM) for precision measurements in three dimensions of mechanical and optical assemblies (one housed in a ISO 5 [class 100] clean room)
**Electronics Assembly and Test**

The Electronics Assembly Laboratory (EAL) is dedicated to providing high reliability, overall quality, and innovation from prototype to flight or deployment, with a focus on producing products on time and at cost to meet customer requirements.

**FEATURES:**

- One-of-a-kind, customized printed circuit boards
- Small production runs of high-reliability boards
- NASA-certified trainers on staff
- Staff trained to NASA workmanship standards in:
  - Hand soldering
  - SMT soldering
  - Cable and harness development
  - ESD prevention practices
  - Conformal coating (including IPC rework capabilities)
- Lead-free production of fine pitch and ball grid array components

**3D Printing**

3D printing is an additive manufacturing process in which layers of plastic resin are deposited on a precision-driven tray. SDL uses 3D printing for conceptualization, prototyping, and end-item products.

**FEATURES:**

- Lower cost and no material waste; an economical alternative to subtractive manufacturing for expensive or complex parts
- Faster than subtractive processing
  - Less setup time
  - Parts can be constructed unattended
- Creates parts in ABS plastic
- Resolution (=finish) and density (=strength) can be optimized for each application
- Multiple material colors available
- ABS parts can be sanded and painted to enhance presentation quality
- Creates parts that fit within a 10x10x12 cube (parts larger than this size can be divided into portions that fit within the cube and then bonded together)
- Expands design possibilities; access for cutting tools is no longer a limitation