

Global Security

Special Technologies Laboratory (STL)



Introduction

Established in 1986, the Special Technologies Laboratory (STL), located in Santa Barbara, California, is part of the Nevada-centered complex of facilities owned by the U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA). The laboratory is managed and operated by National Security Technologies, LLC (NSTec), for the DOE/NNSA.

Since its creation in 1986, STL has developed a culture of innovation and a reputation for providing relevant solutions to difficult national security problems. The culture of the lab is one of sponsor focus, collaboration, quick response, and technical achievement.

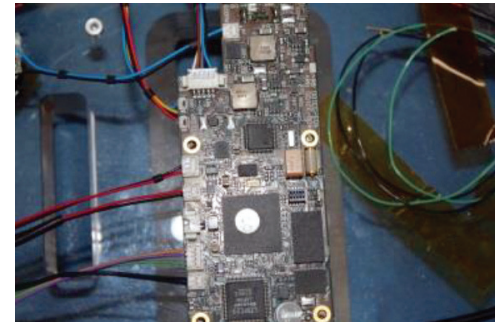
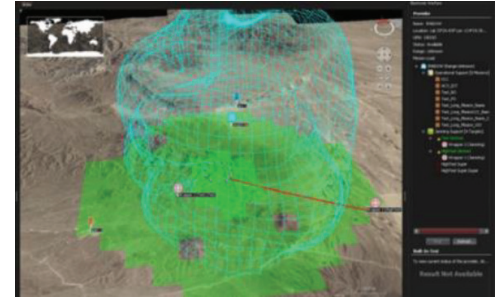
STL is capable of taking a complex idea through the design, development, and proto-typing stages to provide sophisticated yet easy to use technical solutions in short periods of time. User friendliness, maintainability, reliability, and low operations costs are other distinctive characteristics of the laboratory work.

Knowledge, Skills and Abilities

- Physics (Laser, Nuclear, Plasma)
- Chemistry (Analytical, Physical, Spectroscopic)
- Computer (Computer hardware architecture; Design, coding and testing; Multiple operating systems; Device drivers; Networking and security; Database; Model & Simulation; Software QA)
- Electronic Fabrication (Flip-chip, Electronic assembly)
- Analytical Skills (Geospatial Intelligence, Intelligence Operations Exploitation, Signals Intelligence Exploitation)
- Trace Detection Remote Spectroscopy (In-the-field , remote-sensing systems; Effluent diagnostics: Hyper-spectral measurements: Point-sensor arrays, trace detection; Ground truth; Illumination and characterization of SWIR sensors)
- Visualization & Imaging Systems (Augmented vision tools, Optical tagging & tracking; Image based science & engineering)
- Network Science (Modeling, Interdependent proliferant networks, Informational sensing)

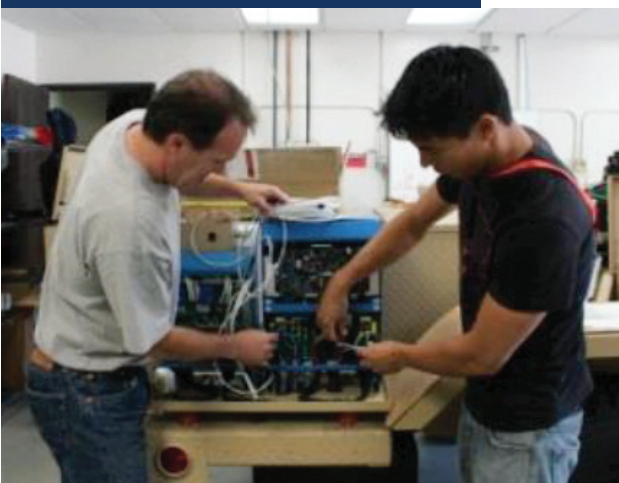
Technical Capabilities

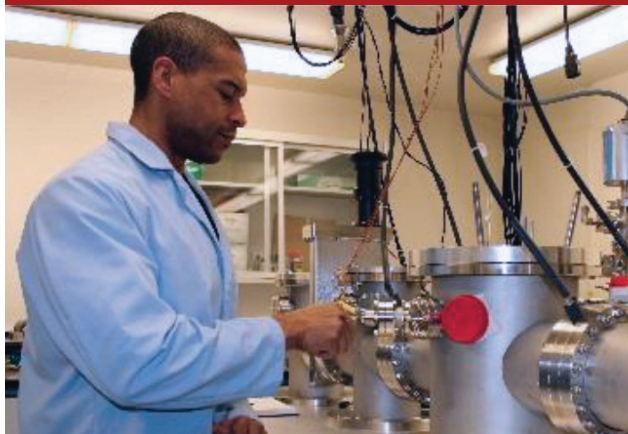
- Electronic Design, Integration, and Manufacturing (Quick Reaction Capability; System integration development)



(concept > instrument > deployment); Electronic & mechanical prototype instrumentation; Custom electronic manufacturing & packaging (additive manufacturing); Compact, low-power electronic design; Field ready instruments with user friendly interface; Technology deployment, training, test & evaluation)

- Software Systems (Tactical command & control; Real-time situational awareness; Multiple platform operation; Plug-in C4ISR architecture platforms (RaptorX))
- Graphical User Interfaces (GUI) (Design and develop for Raptor suite)
- Engineering (Optical, Electrical, Mechanical)
- RF Systems (Software defined radio; Custom RF development; RF detection & characterization; Custom antenna designs; Wireless / Smartphone technology; FPGA firmware development)





- Radar Systems (Material, ground & structure penetrating, Building dimension characterization, Motion detection)
- Materials (CBRNE) Detection & Characterization (Custom sensor systems; Compact, low-power, battery operated; Complete systems (comms, multi-sensing capabilities, operation focused); Directional data; Testing & evaluation; Visualization)

Laboratories and Special Facilities

- Mass spectroscopy and chemical laboratories
- Radiation
- Small explosives (Boom-Box operations)
- Wet chemistry labs
- Electronic assembly
- Mechanical assembly
- Anechoic chamber
- Electronic environmental testing
- Electronic design & development
- Limited Access environments
- Portable laboratory trailers used to support field collections at NNSS and other CONUS locations (Gas releases, FM Spectroscopy for Solids LCP, Anomaly Verification LCP, Ground-based hyperspectral)



For more information, contact:
U.S. Department of Energy
National Nuclear Security Administration
Nevada Field Office
Office of Public Affairs

P.O. Box 98518
Las Vegas, NV 89193-8518

Phone: 702.295.3521
Fax: 702.295.0154
Email: nevada@nnsa.doe.gov

www.nnss.gov

DOE/NV--1562
March 2017

POC: Wil Lewis
lewisw@nv.doe.gov, (805) 681-2404