Small Business Innovation Research/Small Business Tech Transfer

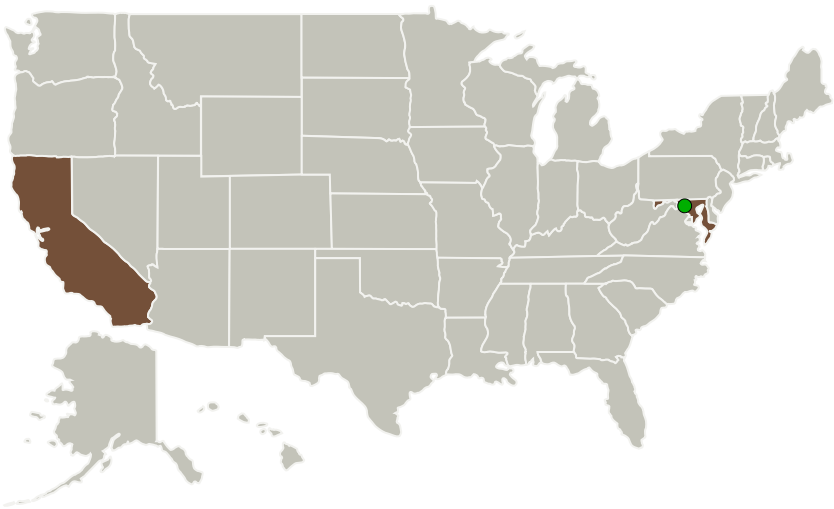
Stabilized Portable External Cavity Laser (SPECL), Phase I

Completed Technology Project (2015 - 2015)

Project Introduction

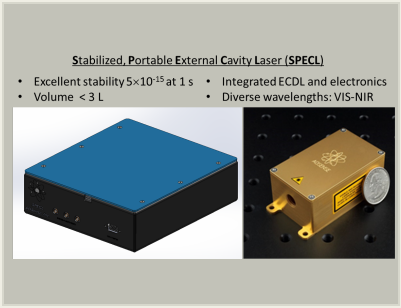
In Phase I, AOSense will design an integrated ultrastable laser module capable of reaching a short-term instability of <5e-15 at 1 s. The flexible design will allow the module to easily adapt for several relevant optical clock wavelengths. Our existing ECDL design will be modified to facilitate simple wavelength conversion; components for each wavelength will be identified. A breadboard-level demonstration of a stabilized 698 ECDL will be carried out. Based on results from this demonstration, the overall system design will be modified, as necessary.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
AOSense, Inc.	Lead Organization	Industry	Sunnyvale, California
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations	
California	Maryland



Stabilized Portable External Cavity Laser (SPECL), Phase I

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Stabilized Portable External Cavity Laser (SPECL), Phase I

Completed Technology Project (2015 - 2015)

Project Transitions

June 2015: Project Start

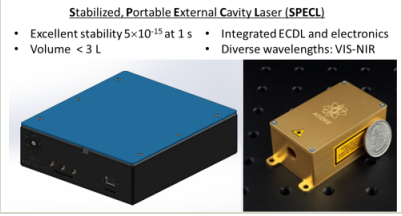
December 2015: Closed out

Closeout Summary: Stabilized Portable External Cavity Laser (SPECL), Phase I Project Image

Closeout Documentation:

- Final Summary Chart Image*(https://techport.nasa.gov/file/140793)*

Images



Briefing Chart Image
Stabilized Portable External Cavity Laser (SPECL), Phase I *(https://techport.nasa.gov/image/125887)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

AOSense, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

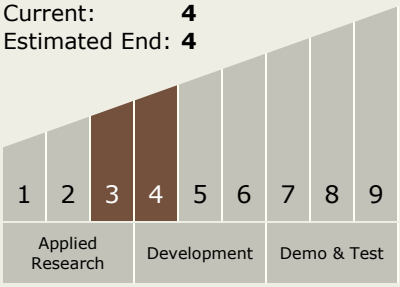
Martin Boyd

Co-Investigator:

Martin J Boyd

Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  └ TX08.3 In-Situ Instruments and Sensors
    └ TX08.3.1 Field and Particle Detectors

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System