Scientific Systems Company, Inc.

SCIENTIFIC SYSTEMS

Woburn, MA

www.ssci.com

858-775-0002

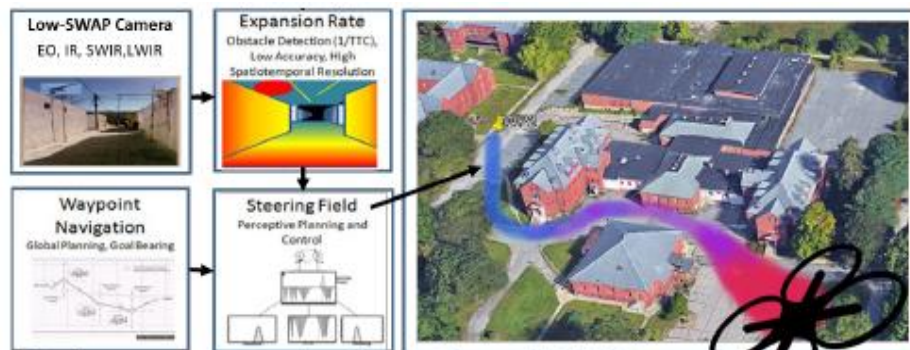## SINCE ITS FOUNDING IN

1976

>**200** SBIR Awards

78 Employees

SDB Socioeconomic Category
2 Patent from SBIR/STTR

Autonomous navigation of small UAVs through complex urban environments using very low SWaP sensors and bio-inspired algorithms

Solicitation:
Miniature Optical Guidance & Navigation

DARPA SBIR Sponsor
SB151-006 Topic Number
Improved Performance, Cost Savings Primary Innovation
Adaptability, Expandability Secondary Innovation

Small Autonomous, Sensor Agnostic, Sense-and-Avoid (SA3)

Affordable advance optical guidance and improved on-board processing for navigation systems will increase mission-effectiveness of UAVs especially in GPS denied areas, including buildings, urban, caves, etc..

Scientific Systems Company, Inc. (SSCI) developed the SA3 system which is an autonomous near silent reactive obstacle avoidance system through complex urban environments outdoor and indoor, and forested areas without the need for human supervision. SA3 leverages bio-inspired vision technology to provide low size, weight (<2.8kg), and power; uses single optical camera, able to be embedded in different platforms; providing both flexibility and affordability compared to laser, radar or stereo vision solutions.

IMPACT TO THE MISSION

SA3 enhanced UAV features provide near silent operations in communication denied environments with adaptability to other UAVs, sensors and missions. SA3 will strengthen and increase collaborative intelligence, surveillance and reconnaissance for military and civilian operations.

BEYOND PHASE II

SSCI received funding for three DARPA programs in total of $8.4M: Fast-Lightweight Autonomy (FLA), Subterranean Challenge, and Counter-UAS. The Defense Threat Reduction Agency (DTRA) funded a Phase II SBIR to develop a low SWaP modular payload that enables unmanned vehicles to navigate, search and locate objects of interest in confined spaces. SSCI is actively looking for joint ventures with domestic small UAV providers for opportunities to provide advanced navigation payload or software as an add-on.