

SwRI Intelligent Systems – Automated Vehicles

SOUTHWEST RESEARCH INSTITUTE®

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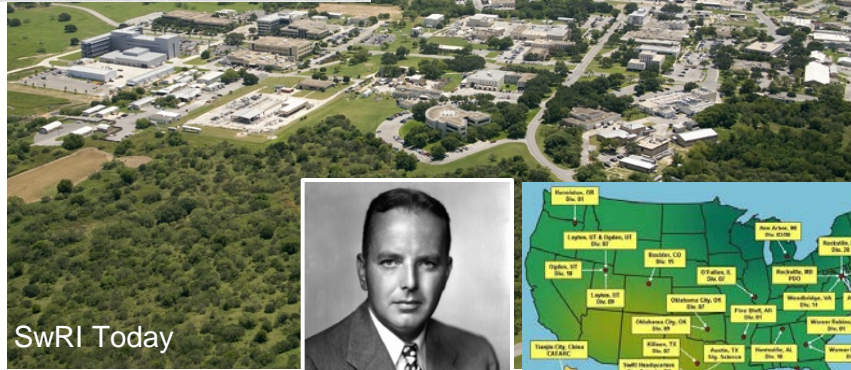
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<http://swri.org>



ADVANCED SCIENCE. APPLIED TECHNOLOGY.

About Southwest Research Institute®



9 Technical Divisions

- ❖ Applied Physics
- ❖ Applied Power
- ❖ **Intelligent Systems**
- ❖ Mechanical Engineering
- ❖ Powertrain Engineering
- ❖ Fluids and Lubricants Research
- ❖ Defense and Intelligence Solutions
- ❖ Space Science and Engineering
- ❖ Chemistry and Chemical Engineering

Organizational Characteristics

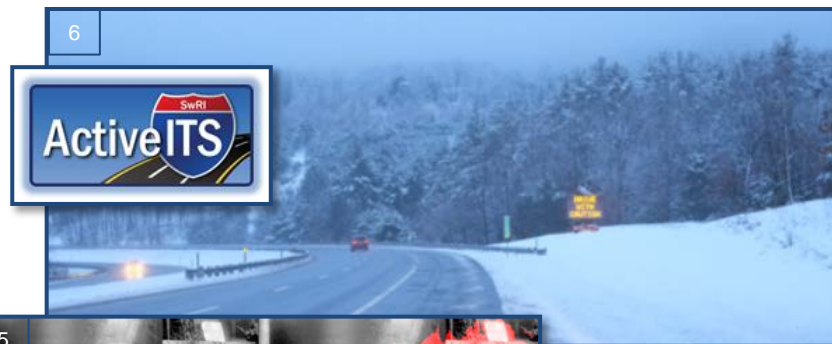
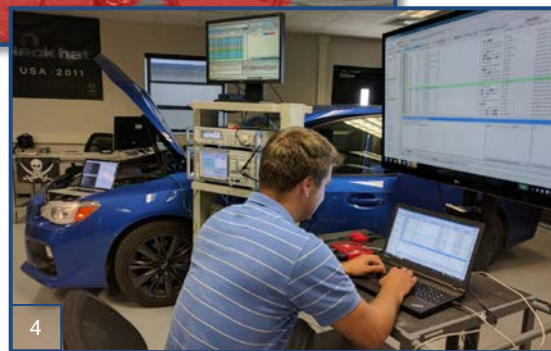
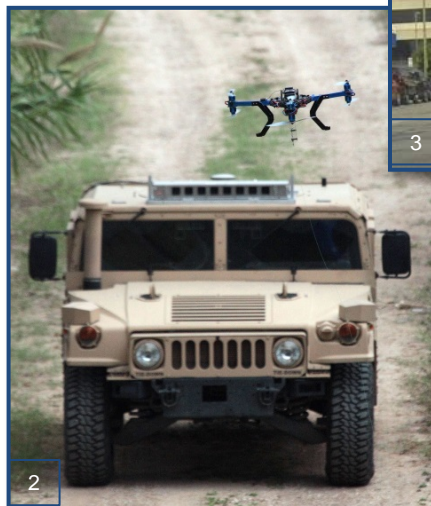
- ❖ Independent and nonprofit [501(c)(3)]
- ❖ Revenue provided by R&D contracts
- ❖ Broad technological and scientific capabilities
- ❖ Decentralized organization
- ❖ Internal research encouraged
- ❖ Unique Client-Oriented intellectual property policy

About SwRI

- ❖ ESTABLISHED: 1947
- ❖ STAFF: >2,600
- ❖ GROSS REVENUE FY2018: >\$584M
- ❖ FY18 Projects: >5,000
- ❖ CAMPUS: ~4.86 km² (1,200 Acres) in San Antonio, TX
- ❖ LABS/OFFICES: > 2.3M ft²
- ❖ Over 1,300 Patents; 43 R&D 100 Awards
- ❖ FY18 IR&D: \$6.8M, 179 projects



SwRI Intelligent Systems



unmanned systems • robotics • active safety systems • leak detection • human performance • big data & analytics • ROS-industrial • process improvement • connected vehicles • perception systems • localization • high-reliability systems • flight test • automated driving • intelligent transportation systems • cybersecurity



ADVANCED SCIENCE. APPLIED TECHNOLOGY.

SwRI's Automated Driving Technologies

- 15 Fully-Automated Different Platforms (from golf carts to full Class VIII tractor trailers)
- Deployed in 7 countries, 4 continents, with 2 UGVs in Afghanistan in 2014.
- Emphasis
 - On- and Off-Road Navigation
 - Single- and Multi-Modal Low Cost Sensor Configurations
 - No dependence on GPS
 - Safe Operation near Vulnerable Road Users
 - Platform, hardware, and sensor agnostic.
- Clients
 - Automotive
 - Agriculture
 - Construction
 - Defense (foreign and domestic)



On-Road



Off-Road



SwRI Shuttle

- 2,500 miles in 3 months
- Adding a dedicated vehicle next year
- 25,000 miles by next year
- Open to SwRI employees and guests next year
- Web-based status and scheduling

